FISHER

Service Manual — Stereo Music System — MC 929 (EUROPE)

Specifications

PRODUCT CODE No.
129 339 01 (EUROPE)

Tuner section	
Frequency range	FM : 87.5 - 108.0 MHz AM : 522 - 1,611 kHz LW : 144 - 290 kHz
Cassette Deck section	
Recording system	AC bias,4 track stereo
Rewind and fast forward time	Approx,115 sec (C-60)
Wow and flutter	0.18%(WRMS)
S/N	45dB/55dB(Dolby OFF /ON)
Seperation	40dB
Turn table	Semi auto DC belt drive
Cartridge	Ceramic

General	
Output power	15 W × 2 (maximum)
Headphone	1/4" Jack
Power source	AC : 220V, 60Hz
Dimensions (approx.)	420 × 292 × (345)* × 360 mm (W × H × D)
Weight(approx.)	6.5 kg including batteries

*: Dimension( ) is to top of the Turntable dust cover.

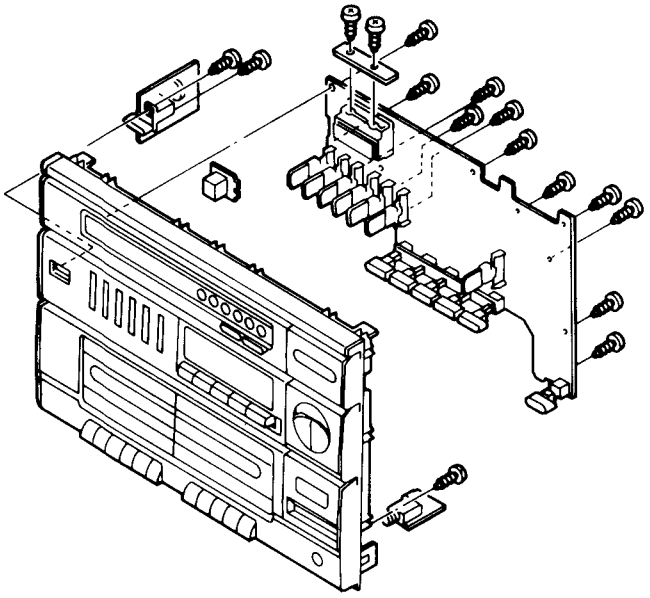
"Dolby" and the double-D symbol are trademark of Dolby Laboratories Licensing Corporation. Dolby Noise Reduction system is manufactured under license from Dolby Laboratories Licensing Corporation.

Specification subject to change without notice.

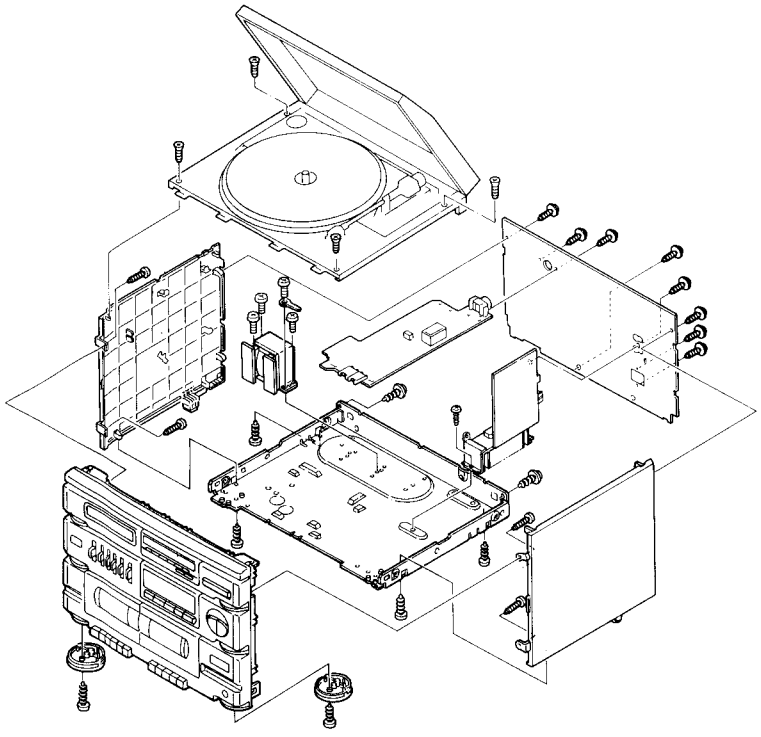
REFERENCE NO. WM-580426

DISASSEMBLY

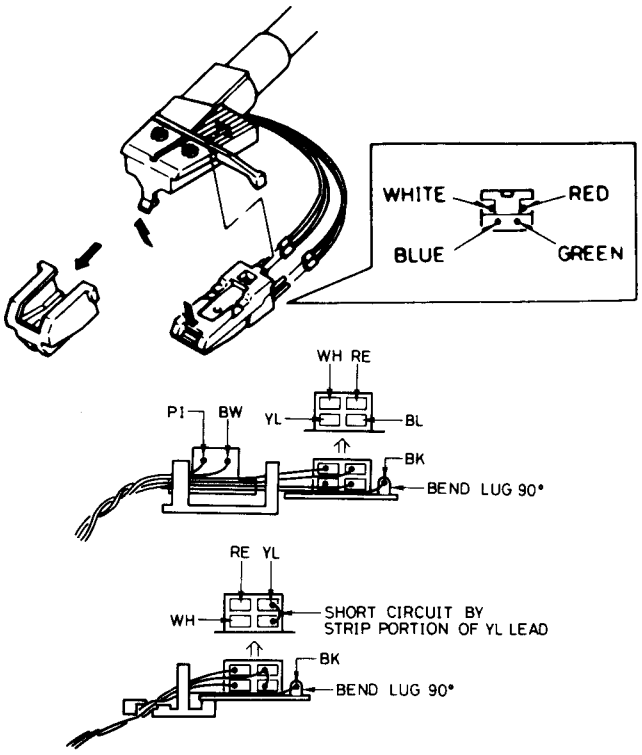
(1) REMOVAL OF FRONT PANEL



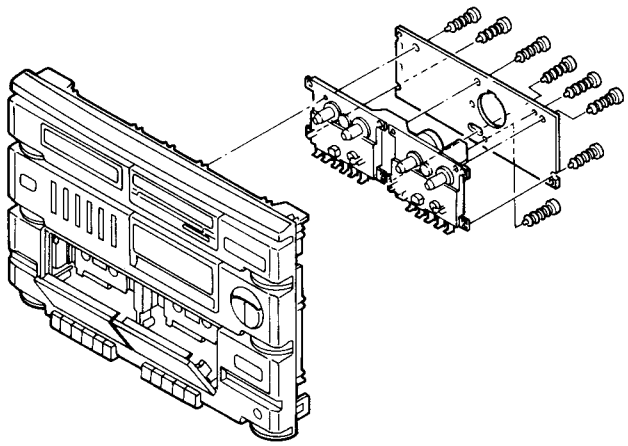
(2) REMOVAL OF P.C.BOARD



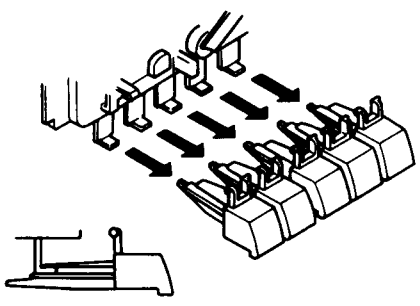
(3) REPLACEMENT OF CARTRIDGE & HEAD



(4) REMOVAL OF MECHANISM

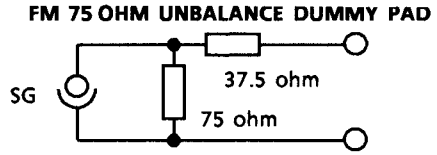


○ ASSEMBLE OF MECHANISM



TUNER ADJUSTMENT

- Use a plastic screwdriver for adjustment.
- Adjust the intermediate frequency of MW/LW and FM to the frequency of ceramic filter.



(1) FM BAND

Antenna : 75 ohm Dummy Pad, Modulation : 400Hz ±22.5kHz dev.

STEP	ITEMS		FREQUENCY INDICATED POSITION	INPUT CONDITIONS		OUTPUT CONDITIONS		ADJUSTING PARTS	STANDARDS
				MEASURING INSTRUCTIONS	CONNECTIONS	MEASURING INSTRUCTIONS	CONNECTIONS		
1	IF	V-Curve	98.0 MHz	FM Sweep Generator (10.7MHz Non Modulation Small Input)	TP103(H) TP104(E)	FM Sweep Generator	TP203(H) TP205(E)	T201	Max.
		S-Curve						T202	Symmetrical Wave Max.
2	Tuning Cover	Low	87.5 MHz	-----	----	Digital Voltmeter	TP401(H) TP102(E)	L104	1.3V±0.05V
		High	108.0 MHz						confirm ≦8.5V
3	Tracking	Low	90.0 MHz	FM-SG(9dB)	TP103:H TP104:E	VTVM Oscilloscope	TUNER OUT (L/R,E)	L101 L102	Max.
		High	106.0 MHz					CT101	
4	IF S-Curve (Distortion factor)		98.0 MHz	FM-SG(66dB)	TP103:H TP104:E	VTVM Oscilloscope	TP204(H) TP205(E)	T202	0±0.05V
5	* VCO (19 kHz)		98.0 MHz	FM-SG(66dB) (Non Modulation)	----	Frequency Counter	TP301(H) TP302(E)	SVR302	19±0.05kHz

*: Use IHF filter adjusted from 200~15000 Hz BPF. Set the Mode switch to STEREO position. When connect counter should be inserted 220k ohm resist in series.

Modulation frequency : 1kHz Standard input : 66dB, Deviation : ±75kHz(mono)
RF level : 75 oHm open voltage dBμV

(2) MW BAND

Antenna : IRE Loop, Standerd modulation : 400Hz 30%

STEP	ITEMS		FREQUENCY INDICATED POSITION	INPUT CONDITIONS		OUTPUT CONDITIONS		ADJUSTING PARTS	STANDARDS
				MEASURING INSTRUCTIONS	CONNECTIONS	MEASURING INSTRUCTIONS	CONNECTIONS		
1	IF		999 kHz	AM Sweep Generator (459kHz Non Modulation)	TP105(H) TP106(E)	AM Sweep Generator	TP206(H) TP205(E)	X203	Dont alignment. Preadjusted.
2	Tuning Cover	Low	522 kHz	-----	----	Digital Voltmeter	TP401(H) TP102(E)	L153	1.4±0.03V
		High	1611 kHz					CT153	8.0±0.05V
3	Tracking	Low	603 kHz	AM-SG(78dB)	IRE Loop Ant.	VTVM Oscilloscope	TUNER OUT (L/R,E)	L151	Max.
		High	1404 kHz					CT151	

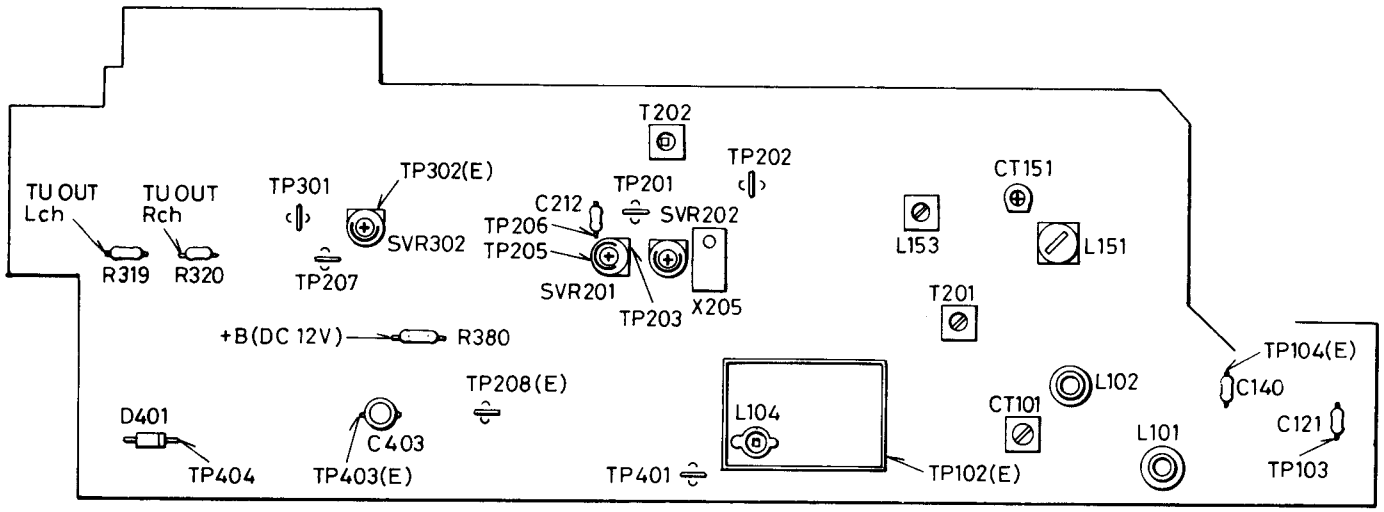
(3) LW BAND

Antenna : IRE Loop, Standerd modulation : 400Hz 30%

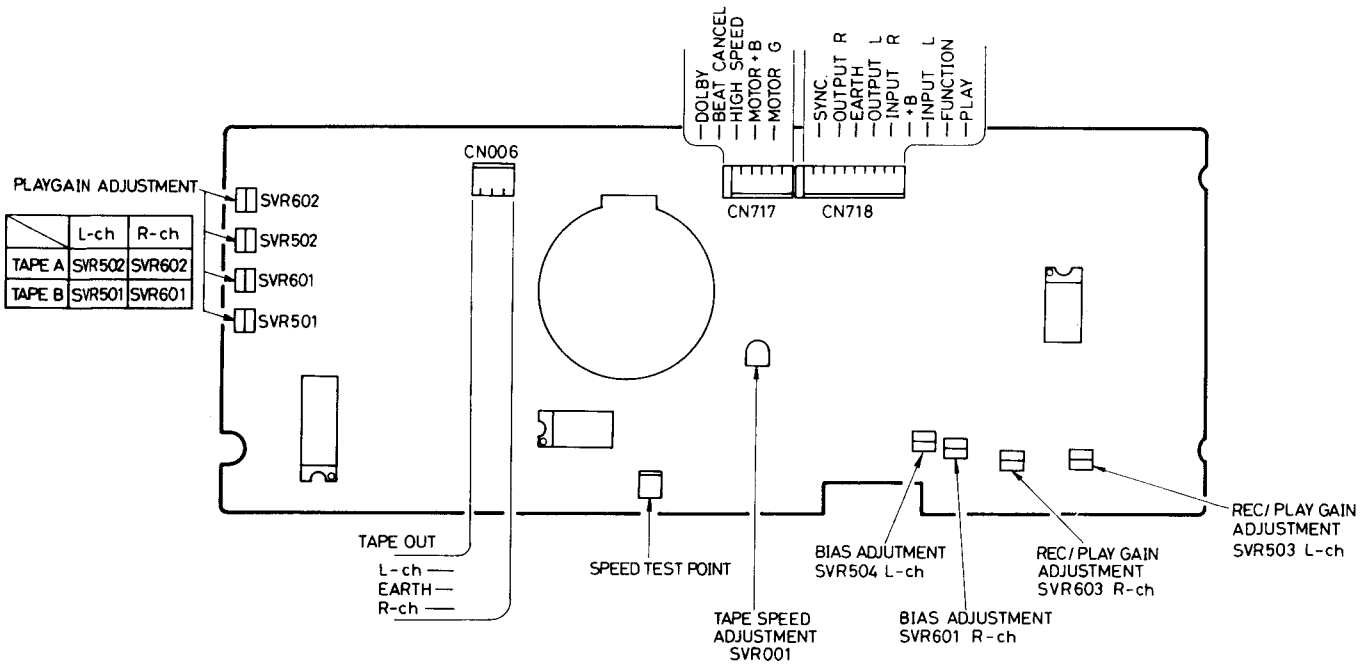
STEP	ITEMS		FREQUENCY INDICATED POSITION	INPUT CONDITIONS		OUTPUT CONDITIONS		ADJUSTING PARTS	STANDARDS
				MEASURING INSTRUCTIONS	CONNECTIONS	MEASURING INSTRUCTIONS	CONNECTIONS		
2	Tuning Cover	Low	144 kHz	-----	----	Digital Voltmeter	TP401(H) TP102(E)	L154	1.6±0.03V
		High	290 kHz					CT154	7.0±0.05V
3	Tracking	Low	162 kHz	AM-SG(85dB)	IRE Loop Ant.	VTVM Oscilloscope	TUNER OUT (L/R,E)	L152	Max.
		High	279 kHz					CT152	

PARTS LOCATIONS

(TUNER)



(DECK)



ADJUSTMENT OF DECK & TORQUE

Amplifier Adjustment

	Item	Deck	Test Tape	Input	DolbySw	Output	Adjust Point	Remarks
1	Head Azimuth	TAPEA TAPEB	VTT738	-	OFF	SP OUT	Azimuth Screw	Adjust so as 10kHz output become maximum.
2	Playback Level	TAPEA TAPEB	TCC130 200nW/m	-	OFF	TAPE OUT	SVR502 SVR602 SVR501 SVR601	Adjust tso as SP OUT output become -1.5dB ± 1.0dB (Set VTT722 to 0dB)
3	Rec / Play Level	TAPEB	AC224	1kHz -8dB	OFF	TAPE OUT	SVR503 SVR603	Adjust to obtain 0.4V on VTVM.
4	Rec / Play Frequency	TAPEB	AC224	1kHz LINE IN	ON	TAPE OUT	SVR504 SVR604	Adjust to obtain same output of 1kHz and 10kHz.

Note. 1.Perform BIAS aligment by SVR 504 ,604 so as No.3 satisfy spec of all item. Perform output aligment by SVR503,603.
2.During aligment,mesurement Beat cancel SW is at 1 condition fundamentally,cfm.R/P frequency characteristic,dolby effect also by 2 condition , when ship out set SW to 1 position.
3.Fix to MAIN VR the position that SP output playing VTT722 is about 2.83V-10dB(2.83V ≈ 1W output).

Tape Speed Adjustment

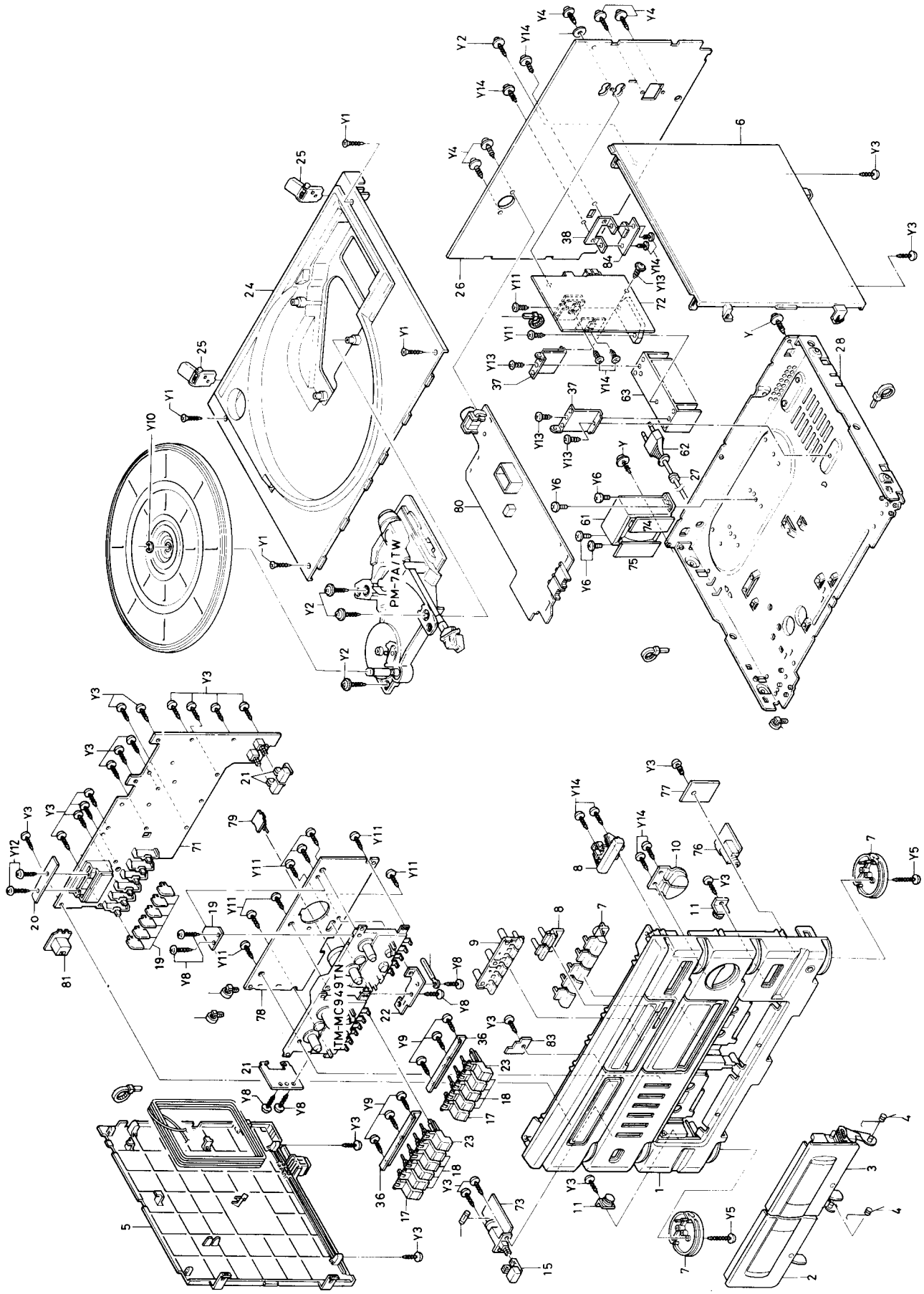
Step	Speed	Deck	Test Tape	SVR	Tape Counter	Remarks
1	Normal	TAPEA	MTT-111N	SVR001	3000 ± 5Hz	*
2	Normal	TAPEB	3000Hz		-40~70Hz	

*Memorize the tape speed on counter. Confirm that the speed of TAPEB is in 40~70Hz against TAPEA.

1.Set the test tape(MTT-111) to "TAPEA" deck.
2.Adjustment to obtain the tape speed counter at Play of step 1.
3.High speed adjustment should be made after normal speewd adjustment.
4.Set the TAPEB mechanism is record made with C-60 Blank cassette tape.
5.djustment should be made at the ending portion of the tape.
6.Set the Dubbing speed "HIGH".
7.Set the test tape(TCW-211) to "TAPEA" deck.
8.Confirm the indication of the tape speed counter within 2 second after push the PLAY(TAPEA) and REC(TAPEB) button.

Item	Take-up torque	Back tention	Pulley tention
Test cassette	PLAY:TW2111 FFWD/REW;TW2231	PLAY/F.F:TW211 REW:Trque Gage	Driving power cassette:TW-2412
PLAY	30~60gr.cm	2~4.5gr.cm	>60g
F.FWD	55~120gr.cm	-	
REW	55~120gr.cm	-	

EXPLODED VIEW (CABINET & CHASSIS)



PARTS LIST

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual.
Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

CAUTION : Regular type resistors and capacitors are not listed. To know those values, refer to the schematic diagram.

PACKING & ACCESSORIES

Ref. No.	Part No.	Description
	614 222 4960	INNER CARTON
	614 217 4487	PAD, TOP
	614 217 4494	PAD
	614 222 5004	INSTRUCTION MANUAL
	614 217 6306	INNER POLYE COVER
	614 180 4644	PROTECTOR SHEET
	614 219 7165	ASSY,COVER,DUST
	614 176 2685	INNER POLYE COVER, 200X300X0.03T
	614 023 7344	ANT, FM
	614 036 6358	SOCKET

CABINET & CHASSIS

Ref. No.	Part No.	Description
1	614 222 5714	ASSY,PANEL,FRONT
2	614 217 3022	ASSY,LID,CASSETTE, TAPE A
3	614 217 3015	ASSY,LID,CASSETTE, TAPE B
4	614 218 0051	SPRING,WIRE, LID CASSETTE
5	614 217 4951	ASSY,PANEL,SIDE, L
6	614 217 4944	ASSY,PANEL,SIDE, R
7	614 218 0655	ASSY,FOOT
8	614 216 8950	BUTTON, TUNING
10	614 216 8981	BUTTON
11	614 069 0385	GEAR ASSY, DAMPER
13	614 216 8936	BUTTON, PRESET
14	614 216 8943	BUTTON, BAND MODE
15	614 216 8929	BUTTON
16	614 216 8974	BUTTON, FUNCTION
17	614 216 8998	BUTTON, MECH
18	614 216 9001	BUTTON, MECH
19	614 216 8912	KNOB,SLIDE, EQ
20	614 216 9247	BRACKET-E, DECK PCB
21	614 216 9230	BRACKET-E, DECK PCB
22	614 216 9254	BRACKET-E, DECK PCB
23	614 216 9018	BUTTON, MECH
24	614 218 7616	PANEL,TOP
25	614 216 8479	CABINET,BOTTOM
or	614 112 3509	HINGE
26	614 222 4717	PANEL,REAR
27	614 129 1901	FIXER
36	614 194 9239	BRACKET, MECH BUTTON
	614 130 0382	LUG
	614 221 3988	BRACKET-E
	614 218 7715	BRACKET-E

FIXING PARTS

Ref. No.	Part No.	Description
Y1	411 022 3304	SCR-S-TPG FLT 3X14
Y2	412 003 1906	SPECIAL SCREW
Y3	411 021 3503	SCR S-TPG BIN 3X10
Y4	411 020 8905	SCR S-TPG BRZ+FLG 3X10
Y5	411 021 4906	SCR S-TPG BIN 3X20
Y6	411 001 4209	SCR S-TPG BIN 4X8
Y8	411 126 1404	SCR S-TPG BIN 2X4
Y9	411 021 3107	SCR S-TPG BIN 2.6X8
Y10	411 001 0508	RING E 6
Y11	411 020 9100	SCR S-TPG BRZ+FLG 3X12
Y12	411 020 9902	SCR S-TPG BRZ+FLG 3X8
Y13	411 020 9803	SCR S-TPG BRZ+FLG 3X6

ELECTRICAL PARTS

Ref. No.	Part No.	Description
61	⚠ 614 221 7412	POWER TRANS
62	⚠ 614 023 3100	POWER CORD
or	⚠ 614 023 3148	POWER CORD
or	⚠ 614 203 0493	POWER CORD
63	614 217 4708	HEAT SINK
74	614 222 4786	PCB, PT 1
77	614 222 6025	PCB, H.P STOPPER
83	614 222 3963	PCB, TUNER PCB STOPPER
	614 218 6442	ASSY,CONNECTOR-S
	614 218 6459	ASSY,CONNECTOR-S
F701	⚠ 423 017 0106	FUSE 250V 1.6A
F801	⚠ 423 017 0106	FUSE 250V 1.6A
F901	⚠ 423 016 9605	FUSE 250V 0.4A
C10	403 135 5801	ELECT 0.1U M 50V

FRONT PCB ASSY

Ref. No.	Part No.	Description
71	614 222 3826	ASSY,PCB, FRONT
	614 217 2612	LCD
	614 222 5547	ASSY,CONNECTOR-S
	614 224 6672	ASSY,CONNECTOR-S
	614 216 9285	MOUNT-E
	614 220 3651	SHEET
	614 211 3004	SOCKET
X401	614 008 0063	CRYSTAL
or	614 204 0317	CRYSTAL
S401	614 024 2393	SWITCH
S402	614 024 2393	SWITCH
S403	614 024 2393	SWITCH
S404	614 024 2393	SWITCH
S405	614 024 2393	SWITCH
S407	614 024 2393	SWITCH
S408	614 024 2393	SWITCH
S409	614 024 2393	SWITCH
S410	614 024 2393	SWITCH
S701	614 024 2393	SWITCH
S702	614 024 2393	SWITCH
S703	614 024 2393	SWITCH
S704	614 024 2393	SWITCH
S705	614 024 2393	SWITCH
S707	614 024 2393	SWITCH
S708	614 217 4425	SWITCH,PUSH
S709	614 217 4425	SWITCH,PUSH
VR701	614 003 4363	V.R
VR702	614 003 4363	V.R
VR703	614 003 4363	V.R

PARTS LIST

Ref. No.	Part No.	Description
VR704	614 003 4363	V.R
VR705	614 003 4363	V.R
VR706	614 003 5766	V.R
CN401	614 020 6548	SOCKET
CN403	614 020 6555	SOCKET
CN411	614 208 2263	PLUG
CN413	614 208 2263	PLUG
CN701	614 020 6579	SOCKET
CN702	614 020 6586	SOCKET
CN703	614 020 1222	SOCKET
CN715	614 035 4911	SOCKET
CN716	614 020 1215	SOCKET
CN717	614 020 6579	SOCKET
CN718	614 020 6616	SOCKET
IC401	410 064 8407	IC TC9306F-045 BS
IC700	409 022 3608	IC LC7818
IC701	409 053 0409	IC TC9153AP
IC702	409 018 4305	IC LA6458D
or	409 039 7408	IC NJM4558D
IC900	409 053 1703	IC TC9174P
IC901	409 020 6908	IC LC4011B
or	409 207 1207	IC MLC4011B
or	409 050 8309	IC TC4011BP
or	409 058 7809	IC UPD4011BC
IC902	409 020 9107	IC LC4069UB
or	409 207 2006	IC MLC4069UB
or	409 051 3907	IC TC4069UBP
or	409 059 3206	IC UPD4069UBC
Q404	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q700	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q701	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q702	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q703	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q800	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q802	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q803	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q900	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q901	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q902	405 001 7209	TR 2SA1015-Y
or	405 005 2002	TR 2SA733-P
Q903	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
D402	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
D403	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
D408	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
D409	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
D410	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
D414	407 005 4505	DIODE DS442X
or	407 013 1701	DIODE 1S1588
or	407 013 7109	DIODE 1S2473
D417	407 005 4505	DIODE DS442X
or	407 013 1701	DIODE 1S1588
or	407 013 7109	DIODE 1S2473

Ref. No.	Part No.	Description
D418	407 005 4505	DIODE DS442X
or	407 013 1701	DIODE 1S1588
or	407 013 7109	DIODE 1S2473
D419	407 005 4505	DIODE DS442X
or	407 013 1701	DIODE 1S1588
or	407 013 7109	DIODE 1S2473
D430	407 053 6704	ZENER DIODE MTZ5.6B
D900	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
D901	407 053 7107	ZENER DIODE MTZ6.2B
D902	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
D903	407 005 4505	DIODE DS442X
or	407 013 1701	DIODE 1S1588
or	407 013 7109	DIODE 1S2473
D904	407 005 4505	DIODE DS442X
or	407 013 1701	DIODE 1S1588
or	407 013 7109	DIODE 1S2473
D905	407 005 4505	DIODE DS442X
or	407 013 1701	DIODE 1S1588
or	407 013 7109	DIODE 1S2473
D906	407 005 4505	DIODE DS442X
or	407 013 1701	DIODE 1S1588
or	407 013 7109	DIODE 1S2473
D907	407 005 4505	DIODE DS442X
or	407 013 1701	DIODE 1S1588
or	407 013 7109	DIODE 1S2473
D909	407 005 4505	DIODE DS442X
or	407 013 1701	DIODE 1S1588
or	407 013 7109	DIODE 1S2473
D911	408 008 9108	LED SLR-56VC70F130-N
D912	408 008 9108	LED SLR-56VC70F130-N
D913	408 008 9108	LED SLR-56VC70F130-N
D914	408 008 9108	LED SLR-56VC70F130-N
D915	408 008 9108	LED SLR-56VC70F130-N
D920	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D921	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
D922	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
D923	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
D924	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
D925	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
D926	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
D930	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
D931	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
D933	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
D934	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
D935	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
D936	407 007 9904	DIODE GMA01

PARTS LIST

Ref. No.	Part No.	Description
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
D940	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
C911	403 044 3004	ELECT 470U M 16V
C917	403 044 3004	ELECT 470U M 16V
R761	401 010 5601	CARBON 5.6 JB 1/2W
R773	401 008 7204	CARBON 2.2K JB 1/2W
R861	401 010 5601	CARBON 5.6 JB 1/2W
R873	401 008 7204	CARBON 2.2K JB 1/2W

MAIN PCB ASSY

Ref. No.	Part No.	Description
72	614 222 4540	ASSY,PCB, MAIN
	614 215 9347	HEAT SINK
	614 218 0068	TERMINAL
	614 194 3626	SOCKET, 4P
	614 020 1246	SOCKET, 5P
	614 020 8863	SOCKET, 5P
	614 020 8870	SOCKET, 6P
	614 017 2102	PLUG, 3P
	614 203 7362	HEAT SINK
	614 016 8228	PLUG, 3P
	614 223 0756	ASSY,CONNECTOR-S
	⚠ 614 208 4540	FUSE HOLDER
	614 017 2096	PLUG, 2P
	614 017 2539	PLUG, 2P
IC750	⚠ 409 101 8302	IC STK4112MK2
IC751	409 016 7902	IC LA3161
IC950	⚠ 409 001 7603	IC AN7812F
or	⚠ 409 078 2402	IC L7812ML
or	⚠ 409 122 6202	IC NJM7812FA
or	⚠ 409 168 2107	IC UPC7812HF
IC951	⚠ 409 001 7603	IC AN7812F
or	⚠ 409 078 2402	IC L7812ML
or	⚠ 409 122 6202	IC NJM7812FA
or	⚠ 409 168 2107	IC UPC7812HF
Q750	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q850	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q952	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
D951	407 004 9105	DIODE DSF10C
or	407 012 3300	DIODE 1SR35-200A
D952	407 004 9105	DIODE DSF10C
or	407 012 3300	DIODE 1SR35-200A
D953	407 004 9105	DIODE DSF10C
or	407 012 3300	DIODE 1SR35-200A
D954	407 004 9105	DIODE DSF10C
or	407 012 3300	DIODE 1SR35-200A
D955	407 004 9105	DIODE DSF10C
or	407 012 3300	DIODE 1SR35-200A
D956	407 004 9105	DIODE DSF10C
or	407 012 3300	DIODE 1SR35-200A
D957	407 004 9105	DIODE DSF10C
or	407 012 3300	DIODE 1SR35-200A
D958	407 004 9105	DIODE DSF10C
or	407 012 3300	DIODE 1SR35-200A
D962	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
D965	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D966	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
C750	403 109 6308	ELECT 1U M 50V
C761	403 057 3800	POLYESTER 0.1MF M 50V
C762	403 057 3800	POLYESTER 0.1MF M 50V
C861	403 057 3800	POLYESTER 0.1MF M 50V
C862	403 057 3800	POLYESTER 0.1MF M 50V
R761	401 010 5601	CARBON 5.6K JB 1/2W, FRAME PROOF
R773	401 008 7204	CARBON 2.2K JB 1/2W, FRAME PROOF
R861	401 010 5601	CARBON 5.6K JB 1/2W, FRAME PROOF
R873	401 008 7204	CARBON 2.2K JB 1/2W, FRAME PROOF

POWER SW PCB ASSY

Ref. No.	Part No.	Description
73	614 222 4557	ASSY,PCB, POWER SW
	⚠ 614 017 8203	TERMINAL BOARD
	⚠ 614 208 4540	FUSE HOLDER
	⚠ 614 123 2089	TERMINAL
S901	⚠ 614 018 8967	SWITCH
C972	⚠ 404 000 1607	CERAMIC 0.01U F 400V
or	⚠ 404 033 3401	CERAMIC 0.01U Z -

PT2 PCB ASSY

Ref. No.	Part No.	Description
75	614 222 4564	ASSY,PCB, PT 2
	614 020 6555	SOCKET, 3P
	614 020 1246	SOCKET, 5P
	⚠ 614 205 2914	IC PROTECTOR ICP-N25
R960	⚠ 402 044 6701	RESISTOR 0.47 J- 1/2W

HEADPHONE PCB ASSY

Ref. No.	Part No.	Description
76	614 222 4571	ASSY,PCB, HEAD PHONE
	614 035 1712	SOCKET
	614 020 1246	SOCKET, 5P

DECK PCB ASSY

Ref. No.	Part No.	Description
78	614 222 3215	ASSY,PCB, DECK
L501	614 029 3807	MX COIL
L502	614 027 8545	CHOKE
or	614 210 3685	INDUCTOR,FERITE
L511	614 202 8865	FILTER
L512	614 029 3142	MX COIL
L601	614 029 3807	MX COIL
L602	614 027 8545	CHOKE
or	614 210 3685	INDUCTOR,FERITE
L611	614 202 8865	FILTER
L612	614 029 3142	MX COIL
L981	614 212 0804	TRANS,OSC
SVR1	614 204 1871	SEMI V.R, 2K
SVR501	614 003 6183	SEMI V.R, 10K
SVR502	614 003 6183	SEMI V.R, 10K
SVR503	614 003 6183	SEMI V.R, 10K
SVR504	614 003 6237	SEMI V.R, 200K
SVR601	614 003 6183	SEMI V.R, 10K
SVR602	614 003 6183	SEMI V.R, 10K
SVR603	614 003 6183	SEMI V.R, 10K
SVR604	614 003 6237	SEMI V.R, 200K
CN1	614 017 2102	PLUG, 3P
CN2	614 017 2133	PLUG, 6P
CN5	614 016 4084	PLUG, 2P

PARTS LIST

Ref. No.	Part No.	Description
CN6	614 020 8849	SOCKET, 3P
CN7	614 020 6562	SOCKET, 4P
CN8	614 020 6548	SOCKET, 2P
CN9	614 223 0329	ASSY,CONNECTOR-S
CN10	614 223 0336	ASSY,CONNECTOR-S
CN717	614 020 8863	SOCKET
CN718	614 020 8900	SOCKET
IC1	409 020 9107	IC LC4069UB
or	409 207 2006	IC MLC4069UB
or	409 051 3907	IC TC4069UBP
or	409 059 3206	IC UPD4069UBC
IC501	409 121 8702	IC LA3246
IC502	409 145 8405	IC UPC1330HA
IC521	409 016 8701	IC LA3220
IC551	409 119 9803	IC CXA1101P
Q1	405 001 7001	TR 2SA1015-GR
or	405 005 2002	TR 2SA733-P
Q2	405 001 7001	TR 2SA1015-GR
or	405 005 2002	TR 2SA733-P
Q3	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q4	405 001 7001	TR 2SA1015-GR
or	405 005 2002	TR 2SA733-P
Q5	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q6	405 012 7403	TR 2SC2001-K
or	405 013 1301	TR 2SC2120-Y
Q8	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q9	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q10	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q501	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q502	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q504	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q505	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q506	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q507	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q508	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q509	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q510	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q601	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q602	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q604	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR

Ref. No.	Part No.	Description
or	405 020 7204	TR 2SC945A-K
Q605	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q606	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q607	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q609	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q981	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q982	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q983	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q984	405 011 8609	TR 2SC1740S-S
or	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q985	405 011 1907	TR 2SC1627-Y
D1	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D2	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D3	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D4	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D5	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D7	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D8	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D9	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D10	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D11	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D13	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D14	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D15	407 005 4505	DIODE DS442X
or	407 013 7109	DIODE 1S2473
D16	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D17	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D18	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D501	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D502	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D601	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
D602	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
R2	⚠ 614 130 6926	TUBE
R981	⚠ 401 023 0709	CARBON 82 JA 1/4W
or	⚠ 614 130 6926	TUBE

PARTS LIST

STOP SW PCB ASSY

Ref. No.	Part No.	Description
79	614 222 3222	ASSY,PCB, STOP SW
	614 203 7911	SWITCH
CN58	614 020 6548	SOCKET, 2P

EXT AC PCB ASSY

Ref. No.	Part No.	Description
84	614 222 4588	ASSY,PCB, EXT AC
	614 016 8235	PLUG
	614 020 8849	SOCKET
	⚠ 402 046 7102	RESISTOR 1 J- 1/2W

TUNER PCB ASSY

Ref. No.	Part No.	Description
80	614 222 3833	ASSY,PCB, TUNER
	614 116 5349	SHIELD PLATE
	614 117 1029	SHIELD PLATE
	614 218 2840	TERMINAL
CT101	614 007 3683	TRIMMER
CT151	614 007 6356	TRIMMER
CT152	614 007 6332	TRIMMER
CT153	614 007 6356	TRIMMER
CT154	614 007 6332	TRIMMER
T201	614 030 3476	I.F.T
T202	614 030 4114	I.F.T
T301	614 027 7845	CHOKE
T302	614 027 7845	CHOKE
L101	614 034 9870	VHF COIL
L102	614 034 9887	VHF COIL
L103	614 028 4058	FILTER
L104	614 035 0036	VHF COIL
L151	614 197 4002	ANT COIL
L152	614 197 3975	ANT COIL
L153	614 033 8904	O.S.C COIL
L154	614 034 1003	O.S.C COIL
L182	614 028 4379	FILTER
X201	614 030 5128	I.F FILTER
X202	614 030 5128	I.F FILTER
X203	614 030 5128	I.F FILTER
X204	614 030 7443	I.F FILTER
or	614 210 4675	FILTER
X205	614 211 2939	FILTER
or	614 210 4675	FILTER
SVR201	614 003 3267	SEMI V.R, 20K
or	614 006 9693	VR, 20K
SVR202	614 003 3250	SEMI V.R, 10K
or	614 006 9686	VR, 10K
SVR302	614 003 3250	SEMI V.R, 10K
or	614 006 9686	VR, 10K
CN412	614 208 2355	SOCKET
CN414	614 208 2355	SOCKET
TP151	614 017 6964	TERMINAL BOARD
TP152	614 017 6964	TERMINAL BOARD
TP153	614 017 6964	TERMINAL BOARD
IC201	409 016 2204	IC LA1265S
IC301	409 016 9500	IC LA3361
IC402	409 154 0209	IC TC9172AP
Q101	405 092 5702	TR 2SK606-Q
Q102	405 012 5904	TR 2SC1923-Y
Q103	405 012 5904	TR 2SC1923-Y
Q104	405 012 5904	TR 2SC1923-Y
Q105	405 092 5702	TR 2SK606-Q
Q151	405 016 2206	TR 2SC2878-A
or	405 016 2305	TR 2SC2878-B
Q152	405 016 2206	TR 2SC2878-A
or	405 016 2305	TR 2SC2878-B
Q153	405 016 2206	TR 2SC2878-A
or	405 016 2305	TR 2SC2878-B
Q154	405 016 2206	TR 2SC2878-A
or	405 016 2305	TR 2SC2878-B
Q155	405 016 2206	TR 2SC2878-A
or	405 016 2305	TR 2SC2878-B
Q156	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q157	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q158	405 078 5405	TR 2SK301-R
Q201	405 018 7902	TR 2SC380TM-O
Q202	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q301	405 012 2002	TR 2SC1815-GR
Q302	405 012 2002	TR 2SC1815-GR
Q304	405 016 2206	TR 2SC2878-A
or	405 016 2305	TR 2SC2878-B
Q351	405 001 7001	TR 2SA1015-GR
Q352	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q354	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q355	405 001 7001	TR 2SA1015-GR
Q357	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q358	405 001 7001	TR 2SA1015-GR
Q361	405 001 7001	TR 2SA1015-GR
Q370	405 001 7001	TR 2SA1015-GR
Q371	405 012 2002	TR 2SC1815-GR
or	405 020 7204	TR 2SC945A-K
Q402	405 078 4903	TR 2SC2634-R
Q403	405 078 4903	TR 2SC2634-R
D101	408 000 0103	VA SVC211SP-B2-AUD
D102	408 000 0103	VA SVC211SP-B2-AUD
D103	408 000 0103	VA SVC211SP-B2-AUD
D104	407 005 4505	DIODE DS442X
or	407 013 1701	DIODE 1S1588
or	407 013 7109	DIODE 1S2473
D151	407 091 5004	VARACTOR DI SVC321SPA-C-2
D152	407 091 5004	VARACTOR DI SVC321SPA-C-2
D201	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
D301	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
D302	407 005 4505	DIODE DS442X
or	407 013 1701	DIODE 1S1588
or	407 013 7109	DIODE 1S2473
D351	407 005 4505	DIODE DS442X
or	407 013 1701	DIODE 1S1588
or	407 013 7109	DIODE 1S2473
D352	407 053 8807	ZENER DIODE MTZ9.1B
D360	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
D365	407 007 9904	DIODE GMA01
or	407 012 4406	DIODE 1SS133
or	407 012 5809	DIODE 1SS176
D401	407 005 4505	DIODE DS442X
or	407 013 1701	DIODE 1S1588
or	407 013 7109	DIODE 1S2473
C157	403 033 3206	CERAMIC 82PF J 50V
C319	403 115 1601	CERAMIC 5600P K 16V
C320	403 115 1601	CERAMIC 5600P K 16V
R380	⚠ 401 018 1209	CARBON 33 JB 1/4W

IR PCB ASSY

Ref. No.	Part No.	Description
81	614 222 3840	ASSY,PCB, IR
S411	614 217 8935	SWITCH
CN404	614 020 6555	SOCKET

PARTS LIST

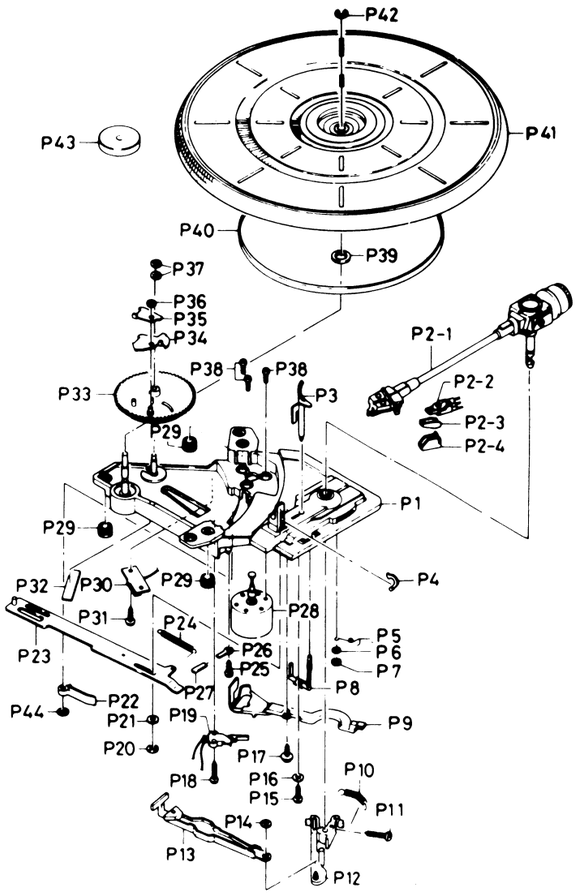
LED PCB ASSY

Ref. No.	Part No.	Description
82	614 222 3857	ASSY,PCB, LED
CN402	614 020 6548	SOCKET
D441	407 130 4906	LED SLP-880A-51-A
D442	407 130 4906	LED SLP-880A-51-A
D443	407 130 4906	LED SLP-880A-51-A

EXPLODED VIEW & PARTS LIST (TUNR-TABLE MECHANISM)

TURN-TABLE MECHANISM

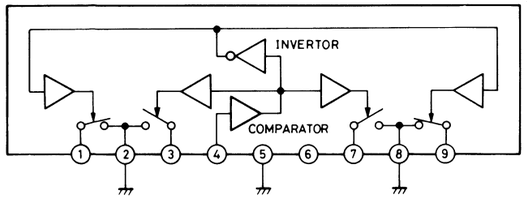
Ref. No.	Part No.	Description
P1	614 067 2565	CHASSIS ASSY
P2 1	614 070 6642	ARM ASSY TONE-ARM
P2 2	614 001 8745	CARTRIDGE (CZ800-10)
P2 3	614 001 7779	NEEDLE CARTRIDGE (ST-707J)
P2 4	614 086 6568	COVER, NEEDLE
P3	614 152 2081	LIFTER, TONE-ARM LIFT
P4	614 152 2425	REST, ARM CLIP
P5	614 152 0162	SPRING WIRE, ADD MOMENTUM
P6	412 014 1506	SPECIAL WASHER, (P5) FIXING
P7	614 127 6400	SPECIAL WASHER, RING 2.6MM
P8	614 139 9430	LEVER, MANUAL LIFT
P9	614 139 9461	LEVER, SIZE CHANGE
P10	614 151 5472	SPRING COIL, ARM-LEVER PULLER
P11	412 006 1804	SPECIAL SCREW 3X20MM
P12	614 139 9447	LEVER, ARM
P13	614 138 9950	SLIDE, TRIP
P14	614 127 6307	SPECIAL WASHER, RING 3MM
P15	412 006 1903	SPECIAL SCREW 3X8MM
P16	614 151 8206	SPRING PLATE, SW LEVER MTG
P17	412 006 2009	SPECIAL SCREW 3X6MM
P18	412 006 2108	SPECIAL SCREW 2X12, SWITCH MTG
P19	614 024 0764	SWITCH, MAIN (S9)
P20	614 127 6403	SPECIAL WASHER, E RING 3MM
P22	614 140 1256	LEVER, SWITCH
P23	614 069 8558	SLIDE ASSY, MAIN
P24	614 151 5489	SPRING COIL, SLIDE (P23) PULLER
P25	412 006 2207	SPECIAL SCREW 3X8MM
P26	614 130 0726	LUG, ARM LEAD RETAIN
P27	614 130 7589	TUBE 3.2X20MM, ARM LEAD RETAIN
P28	614 045 1900	COMMUTATE MOTOR ASSY
or	614 196 0128	COMMUTATE MOTOR ASSY
P29	614 124 9193	RUBBER CUSHION, MECHANISM
P30	614 163 3800	P.C BOARD ASSY, CONNECTION
P31	412 006 2207	SPECIAL SCREW 3X8MM
P32	614 191 9379	LABEL, MODEL
P33	614 134 8094	GEAR, MAIN
P34	614 139 9485	LEVER, LOWER TRIP
P35	614 139 9478	LEVER, ENGAGEMENT
P36	614 127 6307	SPECIAL WASHER, RING 3MM
P37	614 127 6404	SPECIAL WASHER, RING 4MM
P38	412 006 2306	SPECIAL SCREW 2.6X7MM, MOTOR MTG
P39	412 014 1605	SPECIAL WASHER, TURN TABLE THRUST
P40	614 132 9086	FLAT BELT, TURN TABLE
P41	614 057 0939	TURN TABLE ASSY
P42	411 001 0508	RING E 6
P43	614 119 9788	SPACER, 45 ADAPTOR
P44	614 127 6404	SPECIAL WASHER, RING 4MM
	403 069 5007	CERAMIC 0.01U K 50V, SW MTG



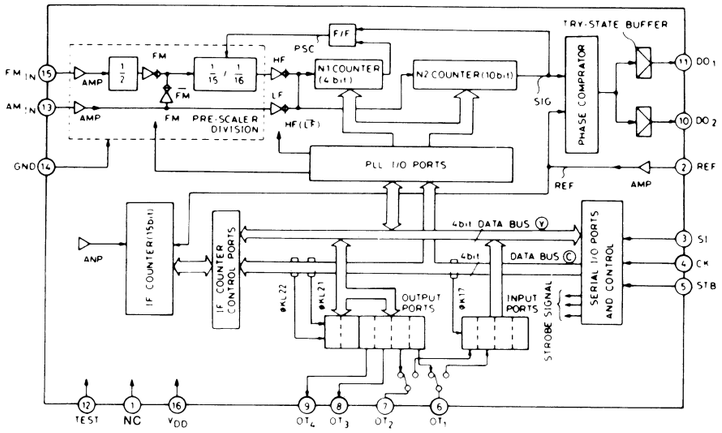
TURNTABLE MECHANISM PM-7A/TW

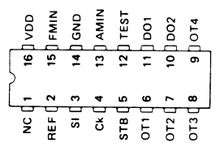
IC BLOCK DIAGRAMS

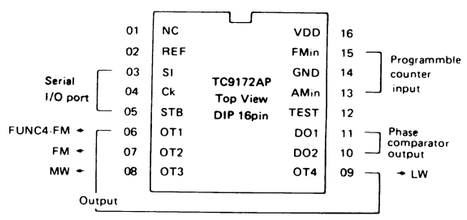
IC502 μPC1330HA (Cassette Deck 2 Channel Head Select Switch IC)



IC402 TC9172AP (HIGH-SPEED PLL WITH PRE-SCALER)



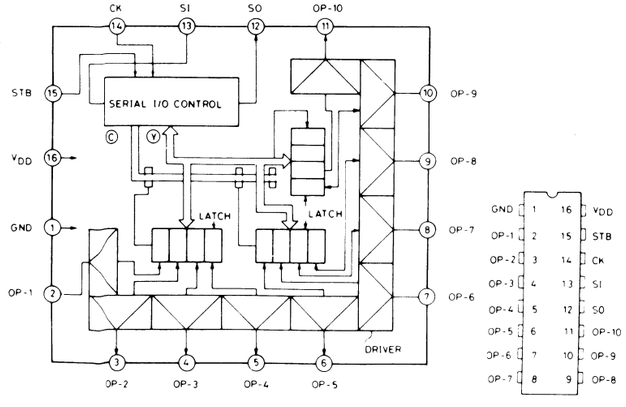




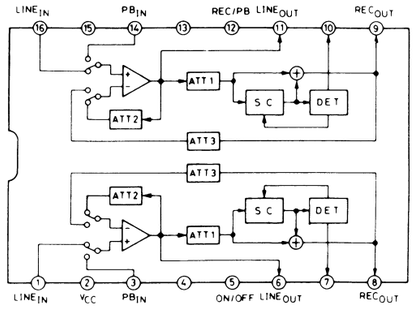
TC9172AP

PORT	NO	NAME	FUNCTION	ACTIVE	FIRST SETTING
OT 1	06	FM	FM BAND OUTPUT	H	H
OT 2	07	MW	MW OUTPUT	H	L
OT 3	08	LW	LW BAND OUTPUT	H	L
OT 4	09	F1	F1 OUTPUT	H	L

IC900 TC9174P (INTER–FACE = EXTENSION OF I/O PORTS)

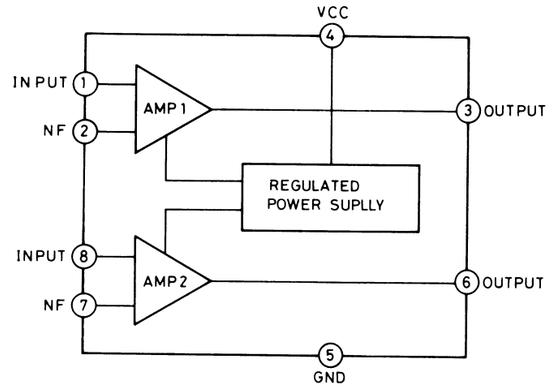


IC551 CXA1101P (DOLBY B-TYPE NOISE REDUCTION)

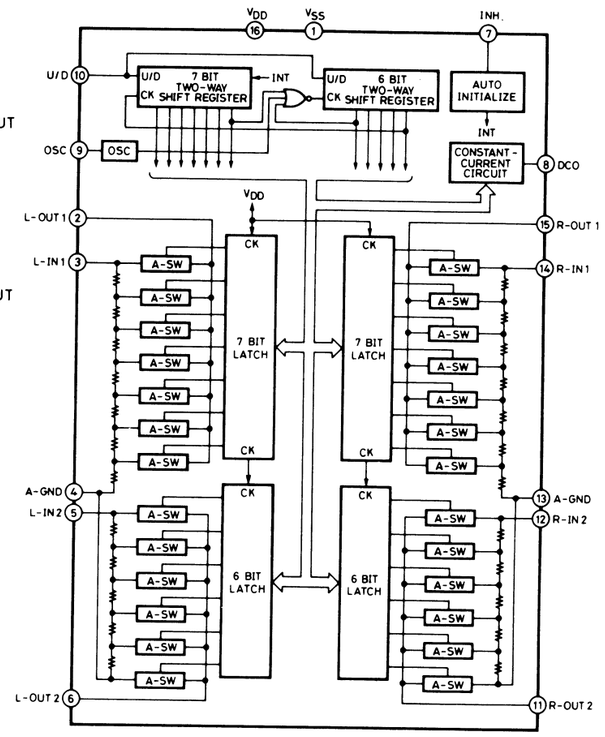


IC BLOCK DIAGRAM

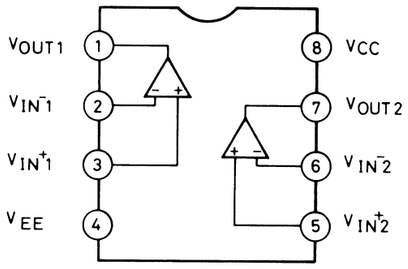
IC751 LA3161 (2-CHANNEL PRE-AMPLIFIER)



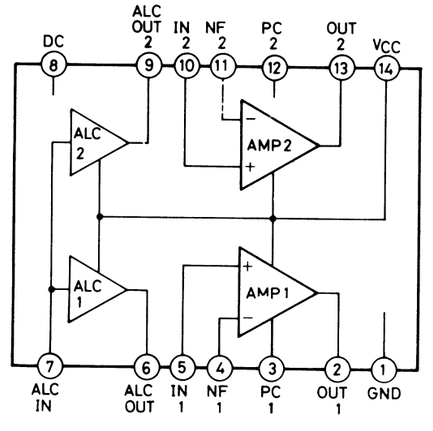
IC701 TC9153AP (Electronic Volume)



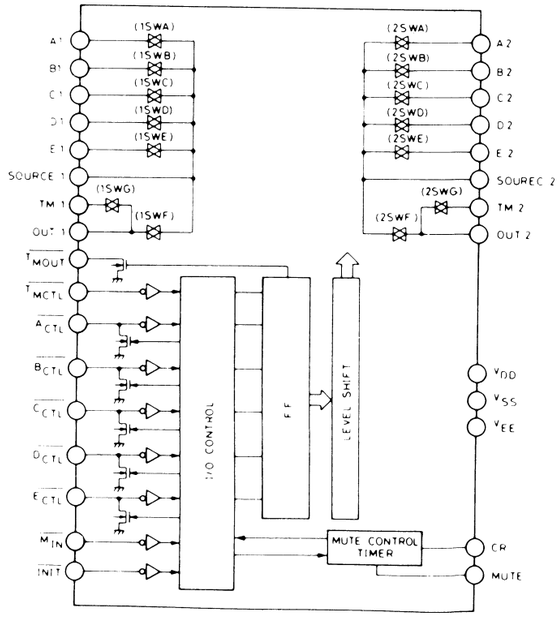
IC702 LA6458D (Ope Amplifier)



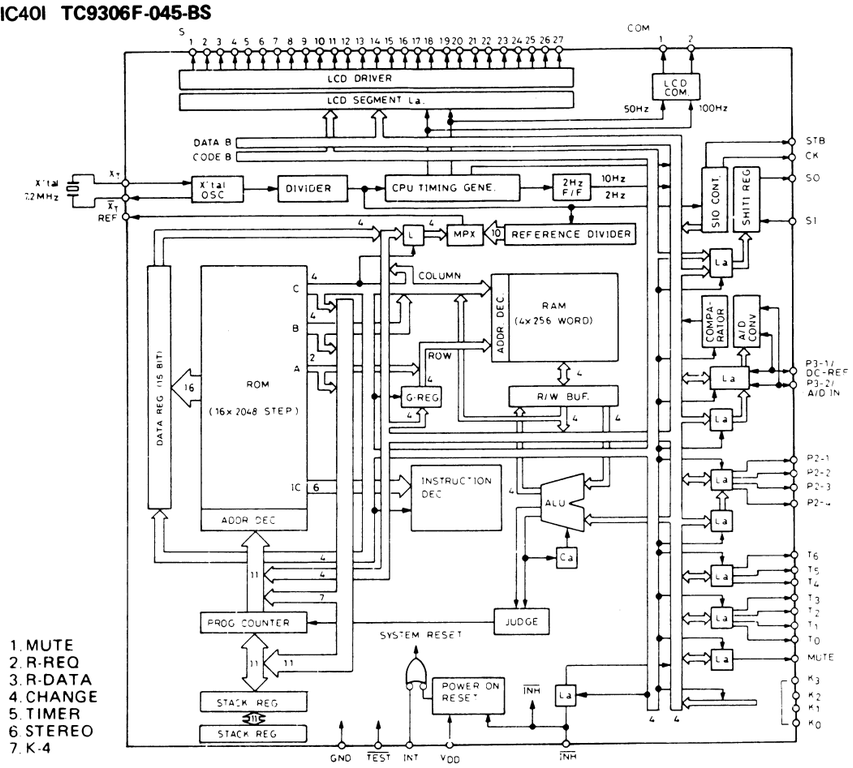
IC521 LA3220 (Dual-Pre-Amplifier with Internal ALC)

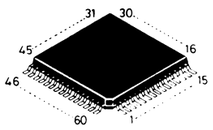


IC700 LC7818 (2-Pole 4-Position Analog Function Switch)

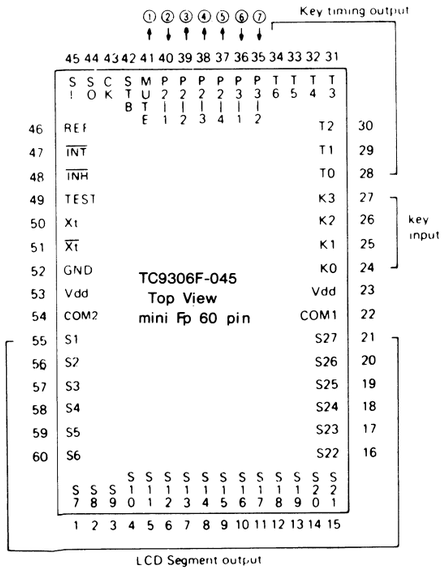


IC401 TC9306F-045-BS





1. MUTE
2. R-REQ
3. R-DATA
4. CHANGE
5. TIMER
6. STEREO
7. K-4



SYSTEM SUMMARY (TC9306F-045)

Combined with PLL LIS TC 9172AP, high efficiency digital tuning system with FM/MW 2-band can be made.

BAND

BAND	CODE A	CODE B	FREQUENCY (Hz)	STEP (Hz)	Fout (Hz)	IF (Hz)
FM	0	0	87.9 ~ 107.9 M	200K	25K	+10.7M
	1	0	87.50 ~ 108.00 M	50K		
	0	1	76.0 ~ 90.0 M	100K		-10.7M
	1	1	65.0 ~108.0M	50K		+10.7M
MW	0	0	530 ~ 1700 K	10K	10K	+450K
	1	0	531 ~ 1602 K	9K	9K	+459K
	0	1	522 ~ 1611 K			+459K
	1	1	522 ~ 1629 K			+450K
LW	1		144 ~ 290 K	AUTO MANU 9K/1K	1K	+459K
SW1	1	–	3.2 ~ 7.3 M	5K	5K	+450K
SW2	–	1	9.5 ~ 21.75 M			

TC9306F-045

PORT	No.	NAME	FUNCTION	ACTIVE	FIRST SETTING
MUTE	41	MUTE	MUTE OUTPUT	H	H
P2-1	40	REM DATA	REMOTE INPUT	H	
P2-2	39	VR UP	VR UP OUTPUT	H	L
P2-3	38	VR DOWN	VR DOWN OUTPUT	H	L
P2-4	37	AUTO/MANUAL	AUTO OUTPUT	H	L
P3-1	36	TUNED/SD	TUNED & SD INPUT	L	-
P3-2	35	STEREO	STEREO INPUT	L	-

IC BLOCK DIAGRAM (2/3)

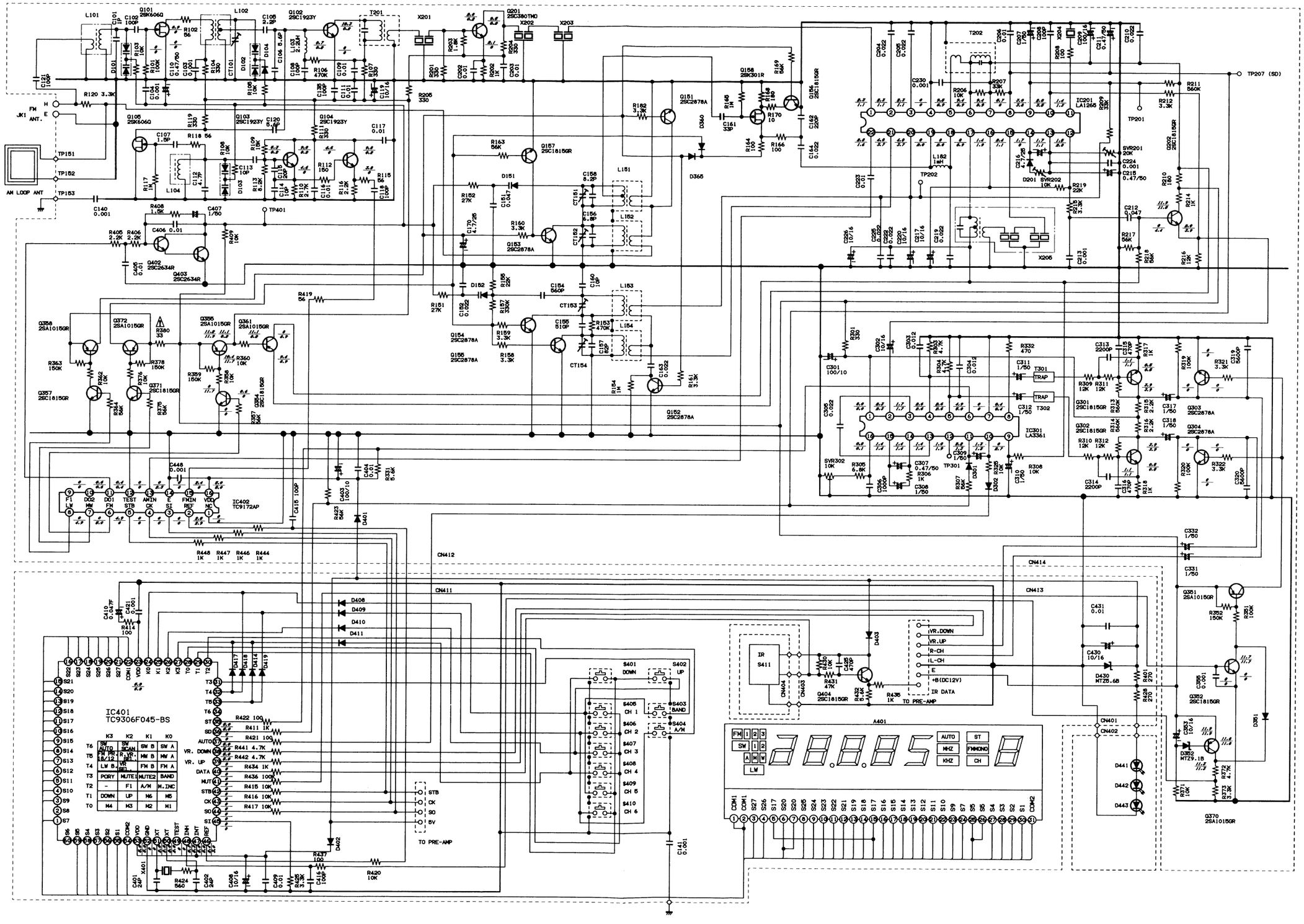
46	REF	Reference Frequency signal output	Output terminal of reference frequency signal supplied to PLL LSI. It is possible to select one of eight kinds of reference frequency signals (1 kHz 5 kHz, 9 kHz, 10 kHz, 12.5 kHz, 25 kHz, 50 kHz and 100 kHz) by program Note When the INH input is at "L" level, the output is automatically set to "L" level	
47	INT	Initialize input	System reset signal input terminal of device While the INT is at "L" level, resetting is activated. When at "H" level, the program is started from 0 address. Normally, when voltage of 0V+4.5V is applied to VDD, system resetting is activated (power on reset) Therefore, this terminal is used, being set to "H" level. Note After completion of system resetting, the I/O port is set in input mode. However, since the output state of output port is undefined, it is necessary to initialize the port by using the program as needed	
48	INH	Inhibit input	Select signal input port of radio mode It is judged that radio is set in ON mode when input is at "H" level and radio is set in OFF mode when input is at "L" level. When this terminal is set in "L" level, REF output is automatically fixed at "L" level. When the CKSTP command is used in the program, and this CKSTP command is executed while INH is at "L" level, the clock generator and CPU stop the operations, and the memory backup state is set by using low current (1 A or below). In this case all output terminals (indication output, output port, etc.) are set automatically to "L" level. Note The CKSTP command is effective when INH is at "L" level. It is executed when INH is at "H" level, the same operation as that of NOOP command is executed	
49	TEST	Test mode control input	Test mode control input terminal The test mode is set when input is at "H" level, and normal operation is executed in "L" level or NC state. This terminal incorporates a pull down resistor. It is normally at "L" level or in NC state. In test mode, the device acts as an evaluation chip, and can evaluate programs on EP ROM base combining with the externally mounted simulation board	R_{IN2}
50 51	Xt Xt	Quartz oscillator	Connecting terminal of quartz oscillator 7.2 MHz quartz is connected When the CKSTP command is executed, oscillation is automatically stopped	—
52	GND	Ground terminal	Ground terminal of device	—
23 53	VDD	Power on terminal	Power on terminal of device In normal operation, voltage of 5V ±10% is applied. In backup state (when CKSTP command is executed), a voltage can be reduced to 2V When voltage of 0V-4.5V is applied to this terminal, system resetting is activated in the device, the program starts from 0 address. (Power on reset) Note Power on resetting is executed when INH is at "L" level Note Since the content of each port (output port, internal port etc.) when power is connected, is undefined, it is necessary to initialize the content by using the program as needed	—

CMOS input — Pull down resistor incorporated CMOS input — CMOS output — Clocked gate type CMOS output

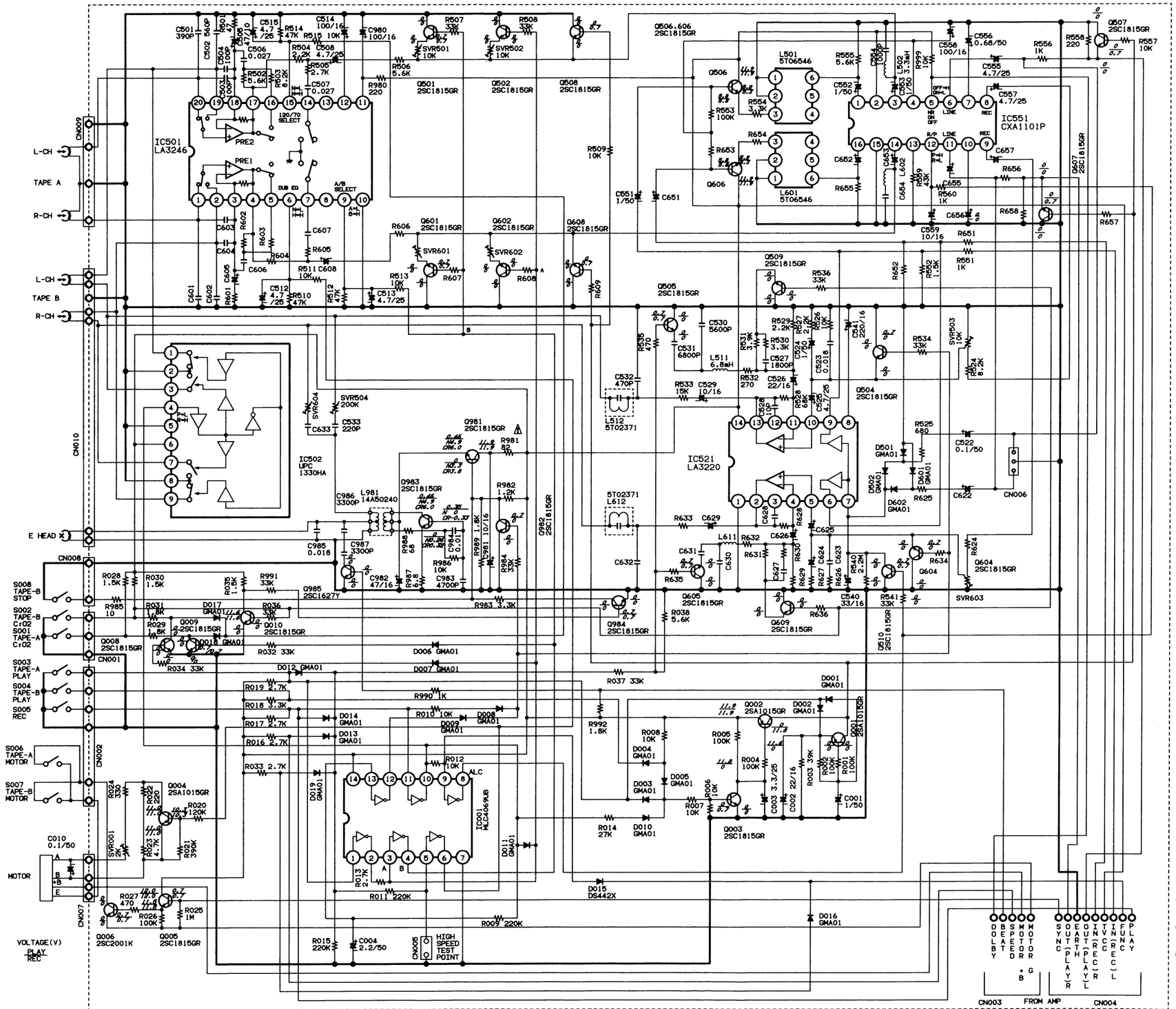
Explanation of terminal functions (Supplement)

Pin No.	Symbol	Terminal name	Description of function and operation	Remarks
22 54	COM1 COM2	LCD common output	Terminal to output common signal output to LCD It is possible to indicate max. 54 segments by using the matrix S1-S27. At this terminal, three levels of VDD, 1/2 VDD and GND are outputted with intervals of 5 ms at a frequency of 50 Hz. Note During system resetting or when CKSTP command is executed, output is automatically set to "L" level	V_{DD}
55~60 1~21 S7~S27	S1~S6	LCD segment output	Terminal to output segment signal output to LCD It is possible to indicate max. 54 segments by using the matrix COM1 and COM2. Data is outputted to these terminals by SEG command (COM1 system) and MARK command (COM2 system). For segment decoding, the decode pattern is made in the ROM area, and it is executed by using the DAL command. Note During system resetting or when CKSTP command is executed, output is automatically set to "L" level	
24~27	K0~K3	Key input port	4 bit input port for key matrix input When KEY command which assigns this port at the operand part is executed, data of these terminals are read in to RAM. All the terminals incorporate pull down resistor. The output ports of To-T6 are normally used for key return timing signal output	R_{IN1}
28~34	To~T6	Key timing output port	4 bit (T0-T3) or 3 bit (T4-T6) output port These ports are normally used for key return timing signal output of key matrix	
35 36	P32 A/D IN P31 /DC REF	I/O port 3 A/D analog voltage input reference voltage input	2 bit I/O port At this port it is possible to assign input and output per bit. For this assignment, the content of internal port called PORT 3 I/O CONTROL is used. This terminal is also used for analog input of incorporated 4 bit A/D converter. The switching to A/D converter input is controlled according to the content of PORT 3 I/O CONTROL port. The incorporated A/D converter adopts the programmed successive comparison system in which P31 is for reference voltage input, and P32 is for analog comparison voltage input	To A/D converter — OUT
37~40	P24~P21	I/O port 2	4 bit I/O port At this port it is possible to assign input and output per bit. For this assignment, the content of internal port called PORT 2 I/O CONTROL port is used	OUT
41	MUTE	Muting signal output port	1 bit output port. This port is normally used for muting control signal output. Note When the INH input is changed from "H" to "L" or "L" to "H", the output is automatically set to "H" level	
42	STB	Strobe pulse output	Serial interface By executing the SIO command, the externally mounted PLL LSI or an optional IC of peripheral part can be controlled. The serial transferring mode; NCD or NCD, can be selected as programmed.	
43	CK	Serial clock output		
44	SO	Serial data output		
45	SI	Serial data input		

SCHEMATIC DIAGRAM(TUNER)



SCHEMATIC DIAGRAM(DECK)



PLAY···TAPE B PLAY
REC ···TAPE B REC

IC501	VOLTAGE (V)		
	PLAY	REC	OTHER
1	0	0	
2	0	0	
3	0.59	0.59	
4	4.4	4.4	
5	4.4	4.4	
6	0	0	5.9(HI.DUB.)
7	0	0	
8	4.4	4.4	
9	5.9	5.9	0(TAPE A PLAY)
10	0	0	
11	9.7	9.7	
12	9.7	9.7	
13	4.4	4.4	
14	0	0	
15	0	0	5.9(Cr02)
16	4.4	4.4	
17	4.4	4.4	
18	0.59	0.59	
19	0	0	
20	0	0	

S001 TAPE A SELECT SW "Cr02"
S002 TAPE B SELECT SW "Cr02"
S003 TAPE A PLAY SW "OFF"
S004 TAPE B PLAY SW "OFF"
S005 TAPE B REC SW "OFF"
S006 TAPE A MOTOR SW "OFF"
S007 TAPE B MOTOR SW "OFF"
S008 TAPE B STOP SW "OFF"

IC502	VOLTAGE(V)	
	PLAY	REC
1	0	0
2	0	0
3	0	0
4	0	11.6
5	0	0
6	11.9	11.9
7	0	0
8	0	0
9	0	0

IC521	VOLTAGE (V)		
	PLAY	REC	OTHER
1	0	0	
2	0.59	0.59	
3	11.2	11.2	
4	5.9	5.9	
5	5.9	5.9	
6	0	0	
7	0	0	1.15(ALC DOING)
8	5.9	5.9	
9	0	0	
10	5.9	5.9	
11	5.9	5.9	
12	11.2	11.2	
13	5.9	5.9	
14	11.9	11.9	

IC551	VOLTAGE (V)		
	PLAY	REC	OTHER
1	6.0	6.0	
2	11.9	11.9	
3	6.0	6.0	
4	6.0	6.0	
5	11.9	11.9	0(DOLBY ON)
6	6.1	6.1	
7	0.4	0.4	
8	6.1	6.1	
9	6.1	6.1	
10	0.4	0.4	
11	6.1	6.1	
12	11.8	0	0(FUNCTION SW (NON TAPE REC))
13	1.2	1.2	
14	6.0	6.0	
15	0	0	
16	6.0	6.0	

COMMON USE

D001 002 003 004 005 006
007 008 009 010 011 012
013 014 016 017 018 019
501 601 502 602

GMA01
(or1SS133)

D015
DS442X
(or1S2473)

Q501 601 502 602 504 604
505 605 506 606 507 607
508 608 509 609 510 982
984 003 005 008 009 010
2SC1815GR
(or2SC945KorC1740S)

Q981 983
2SC1815GR
(or2SC945K)

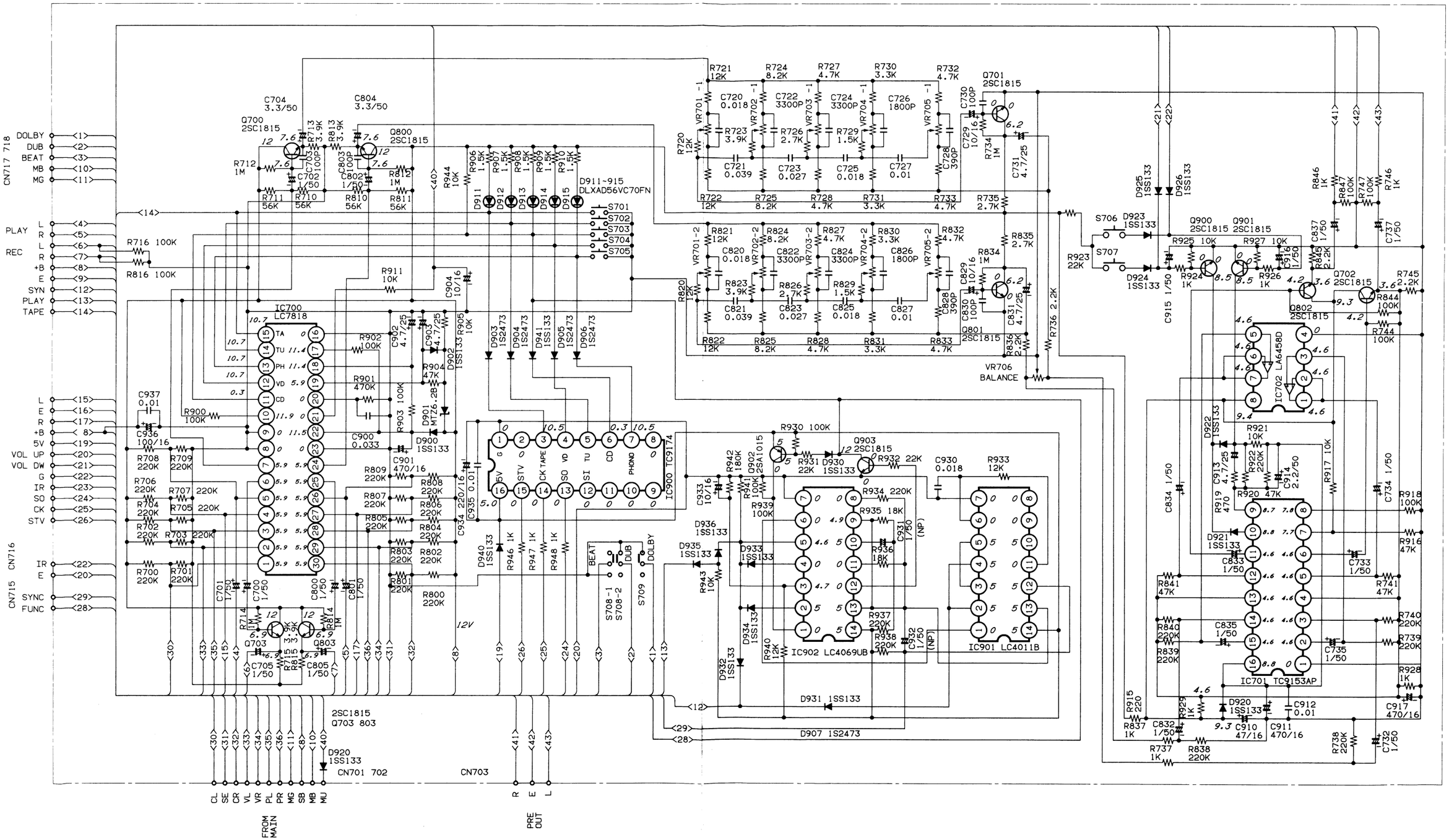
Q001 002 004
2SA1015GR
(or2SA733P)

Q006
2SC2120Y
(or2SC2001K)

IC001
MLC4069UB
(orLC4069UBorTC4069UBP
orUPD4069UBC)

IC001	VOLTAGE (V)			
	PLAY	REC	HI.DUB	NOR.DUB
1	11.3	11.2	0	0
2	0	0.35	12.0	12.0
3	0	10.4	11.0	11.0
4	11.8	0	0	0
5	10.7	10.5	0.4	9.6
6	0	0	11.9	0
7	0	0	0	0
8	12.0	0	12.0	12.0
9	0	11.1	0.6	0.6
10	0	11.1	11.6	11.6
11	11.5	0	0	0
12	11.9	0	0	0
13	0	10.8	11.4	11.4
14	12.0	12.0	12.0	12.0

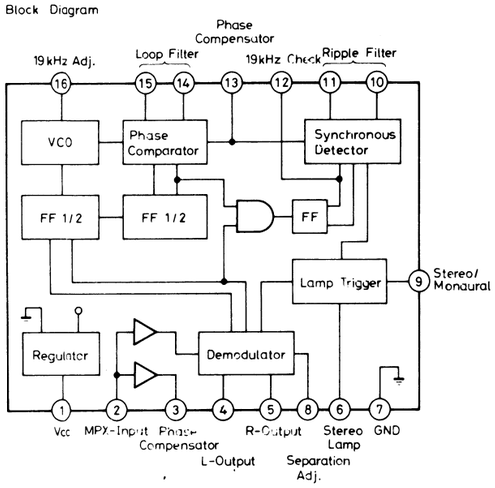
SCHEMATIC DIAGRAM(PRE AMP)



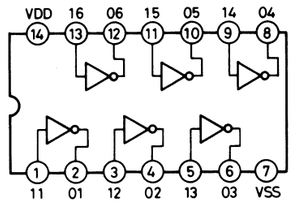
IC BLOCK DIAGRAM

IC301 LA3361

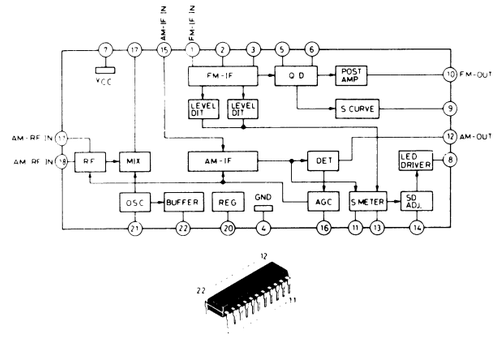
Block Diagram



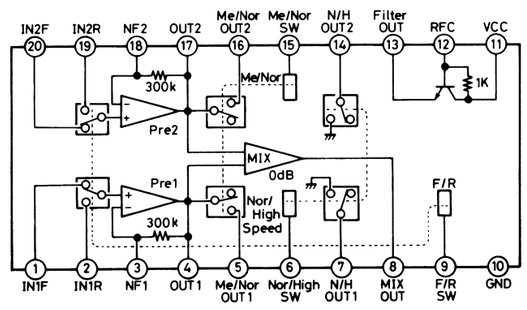
IC902 LC4069UB(HEX INVERTER)



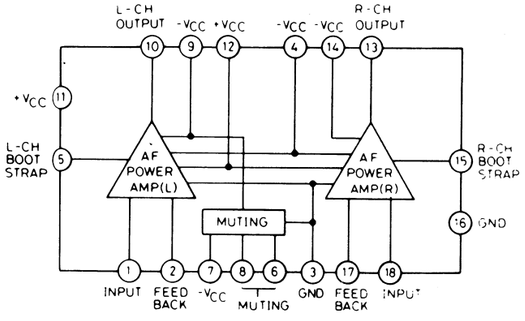
IC201 LA1265 (AM/FM 1 CHIP RADIO)



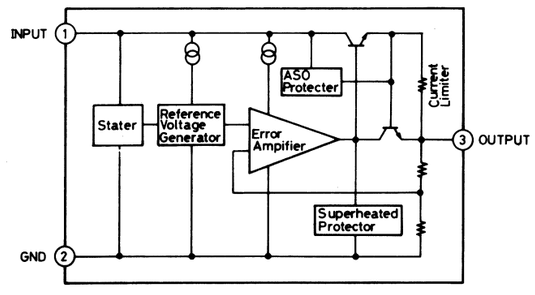
IC501 LA3246 (Pre-Amp, Mixing-Amp, Electrical Switch)



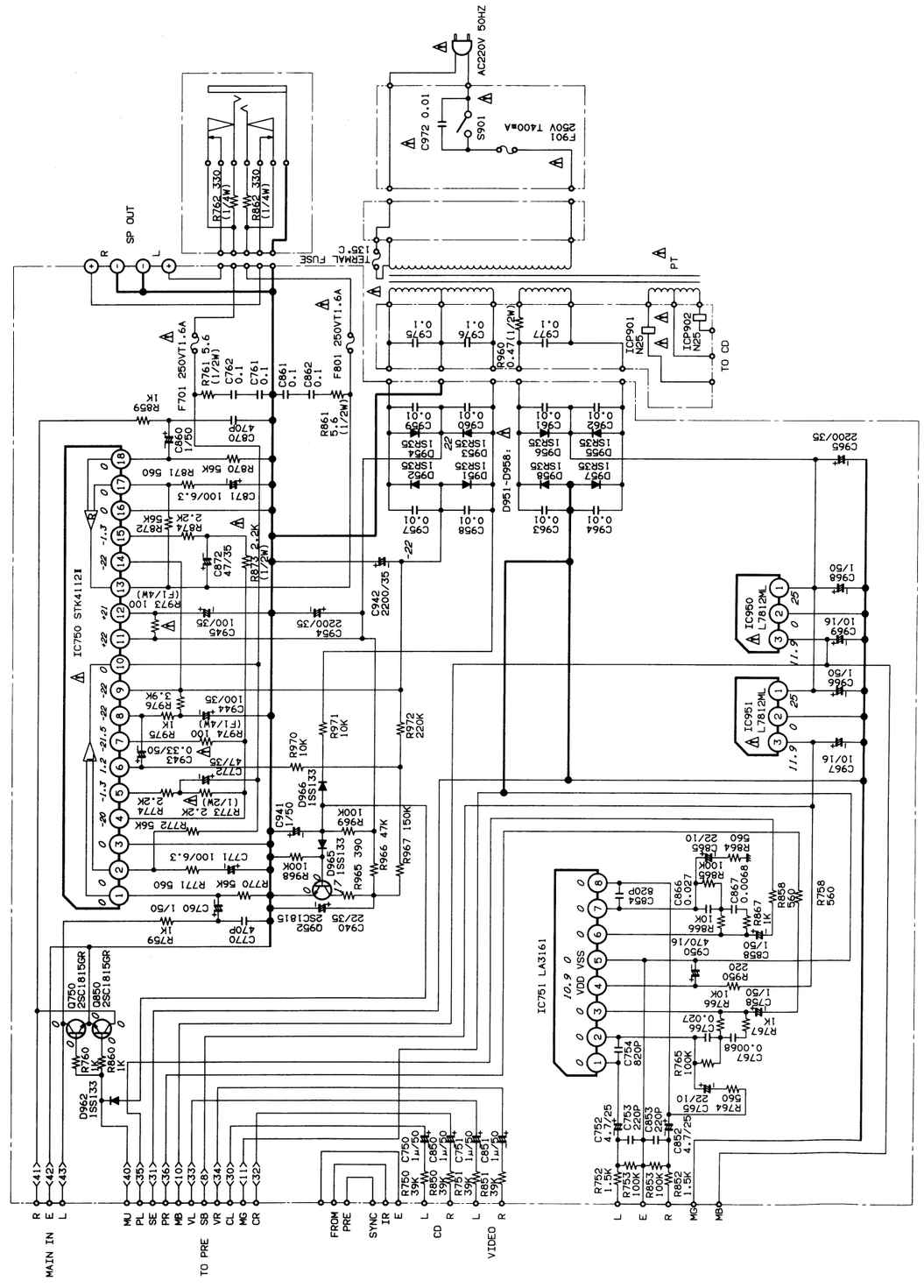
IC953 STK-4122 II (AF POWER AMP)



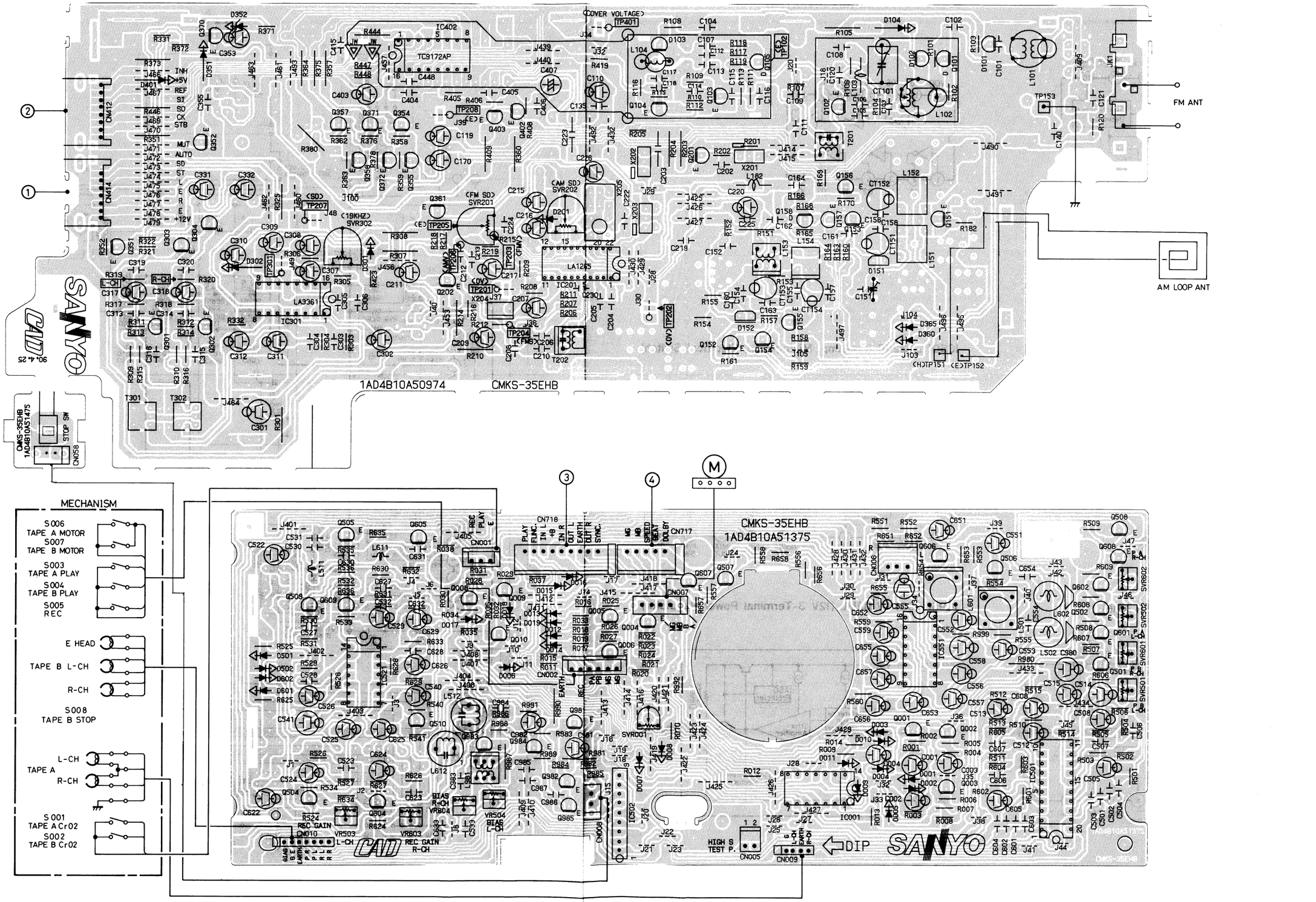
IC950, 951 L7812ML (12V 3-Terminal Power Regulator)



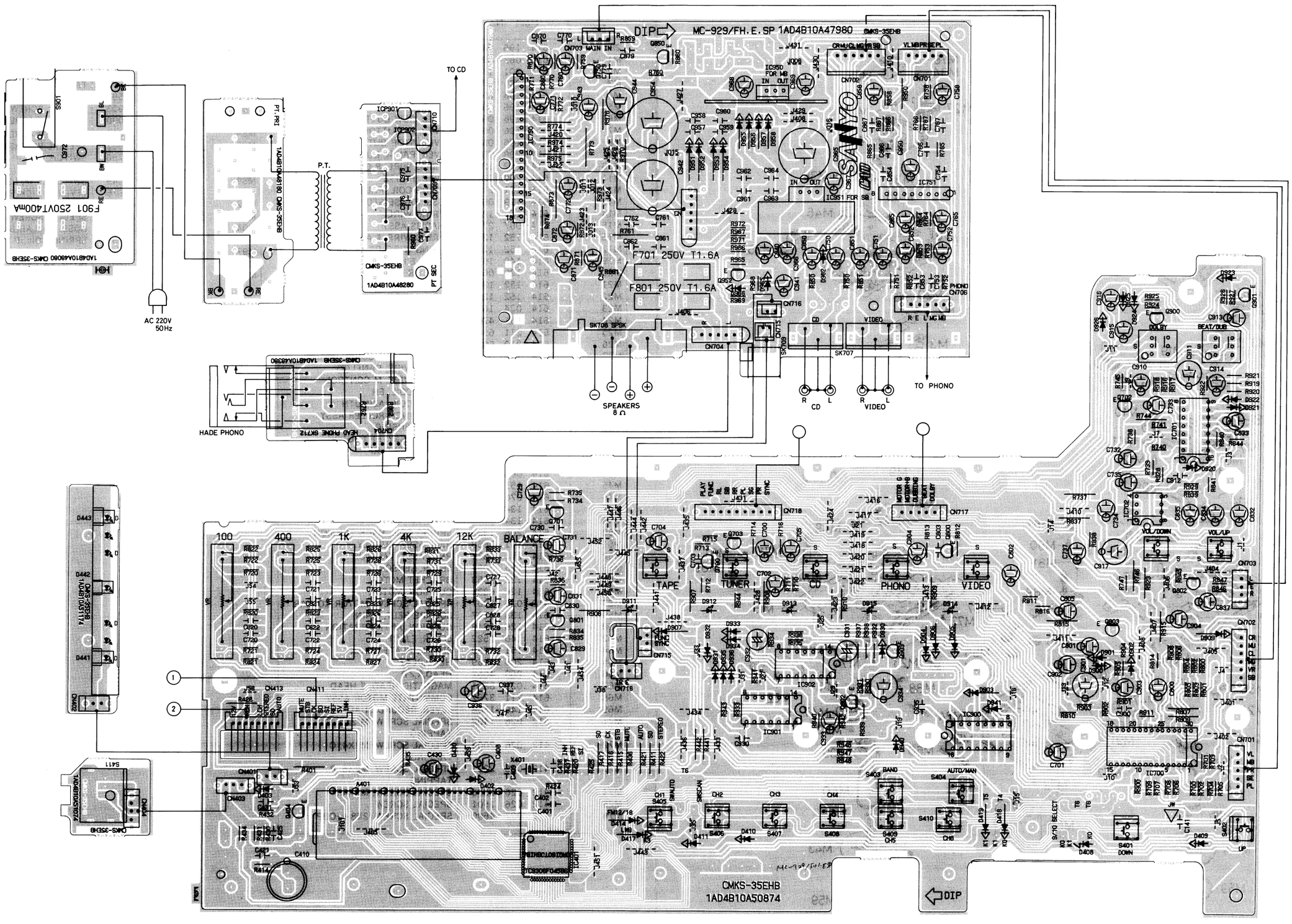
SCHEMATIC DIAGRAM (MAIN AMP)


AC220V 50HZ
S901
C972 0.01
F901 250V T400mA
SP OUT
R
L
TERMAL FUSE 135°C
PT
TO CD
ICP901 NE8
ICP902 N25
R762 330 (1/4W)
R863 330 (1/4W)
F701 250VT1.6A
R761 5.6 (1/2W)
C762 0.1
C761 0.1
C861 0.1
C862 0.1
F801 250VT1.6A
R859 1K
C860 1/50
C870 4700
R861 5.6 (1/2W)
R960 0.47(1/2W)
C976 0.1
C977 0.1
IC750 STK4112II
IC751 LA3161
IC950 L7812ML
IC951 L7812ML
D951-D958: ISR35
R870 56K
R871 560
C871 100/6.3
R872 2.2K
R873 2.2K (1/2W)
C872 47/35
R973 100 (F1/4W)
R974 100 (F1/4W)
R975 1K
R976 3.9K
C942 2200/35
C945 100/35
C944 100/35
C943 0.33/50
C772 47/35
R773 2.2K (1/2W)
R774 2.2K
R772 56K
C771 100/6.3
R770 56K
R771 560
C760 1/50
R759 1K
C770 470P
R970 10K
R971 10K
R972 220K
R969 100K
R966 47K
R967 150K
R965 390
R968 100K
C941 1/50
D962 1SS133
D965 1SS133
D966 1SS133
Q940 2SD1815
Q941 2SC1815
R940 2.2K
R941 1K
Q750 2SC1815GR
Q850 2SC1815GR
R750 1K
R850 1K
C750 1u/50
C850 1u/50
C751 1u/50
C851 1u/50
R751 39K
R851 39K
R752 1.5K
R753 100K
R853 100K
C752 4.7/25
C753 220P
C853 220P
C852 4.7/25
R852 1.5K
C854 820P
C855 820P
C856 0.027
C857 0.0068
R856 10K
R857 1K
R858 560
R758 560
R855 10K
R854 10K
C858 1/50
C758 1/50
R760 220
R760 10K
C766 0.027
R767 1K
C767 0.0068
R765 100K
C764 22/10
C765 2200/35
C648 1/50
C649 10/16
C646 1/50
C647 10/16
C650 470/16
C648 1/50
C649 10/16
C646 1/50
C647 10/16
C650 470/16
C865 22/10
R864 10K
R865 10K
C867 0.0068
C866 0.027
R866 10K
R867 1K
R858 560
R758 560
C963 0.01
C964 0.01
C960 0.01
C961 0.01
C958 0.01
C959 0.01
C956 0.01
C957 0.01
C954 0.01
C955 0.01
C952 0.01
C953 0.01
D952 ISR35
D953 ISR35
D954 ISR35
D955 ISR35
D956 ISR35
D957 ISR35
D958 ISR35
D951 ISR35
C699 0.01
C976 0.1
C977 0.1
C960 0.01
C961 0.01
C962 0.01
C963 0.01
C964 0.01
C957 0.01
C958 0.01
C959 0.01
C956 0.01
C954 0.01
C955 0.01
C952 0.01
C953 0.01
D952 ISR35
D953 ISR35
D954 ISR35
D955 ISR35
D956 ISR35
D957 ISR35
D958 ISR35
D951 ISR35
C699 0.01
C976 0.1
C977 0.1
R960 0.47(1/2W)
ICP901 NE8
ICP902 N25
TO CD
R762 330 (1/4W)
R863 330 (1/4W)
F701 250VT1.6A
R761 5.6 (1/2W)
C762 0.1
C761 0.1
C861 0.1
C862 0.1
F801 250VT1.6A
R859 1K
C860 1/50
C870 4700
R861 5.6 (1/2W)
C972 0.01
S901
F901 250V T400mA
AC220V 50HZ
C645 100/35
C654 2200/35
C942 2200/35
C646 1/50
C647 10/16
C649 10/16
C648 1/50
C650 470/16
C648 1/50
C649 10/16
C646 1/50
C647 10/16
C650 470/16
C765 2200/35
C764 22/10
C765 2200/35
C764 22/10
C765 2200/35
C764 22/10

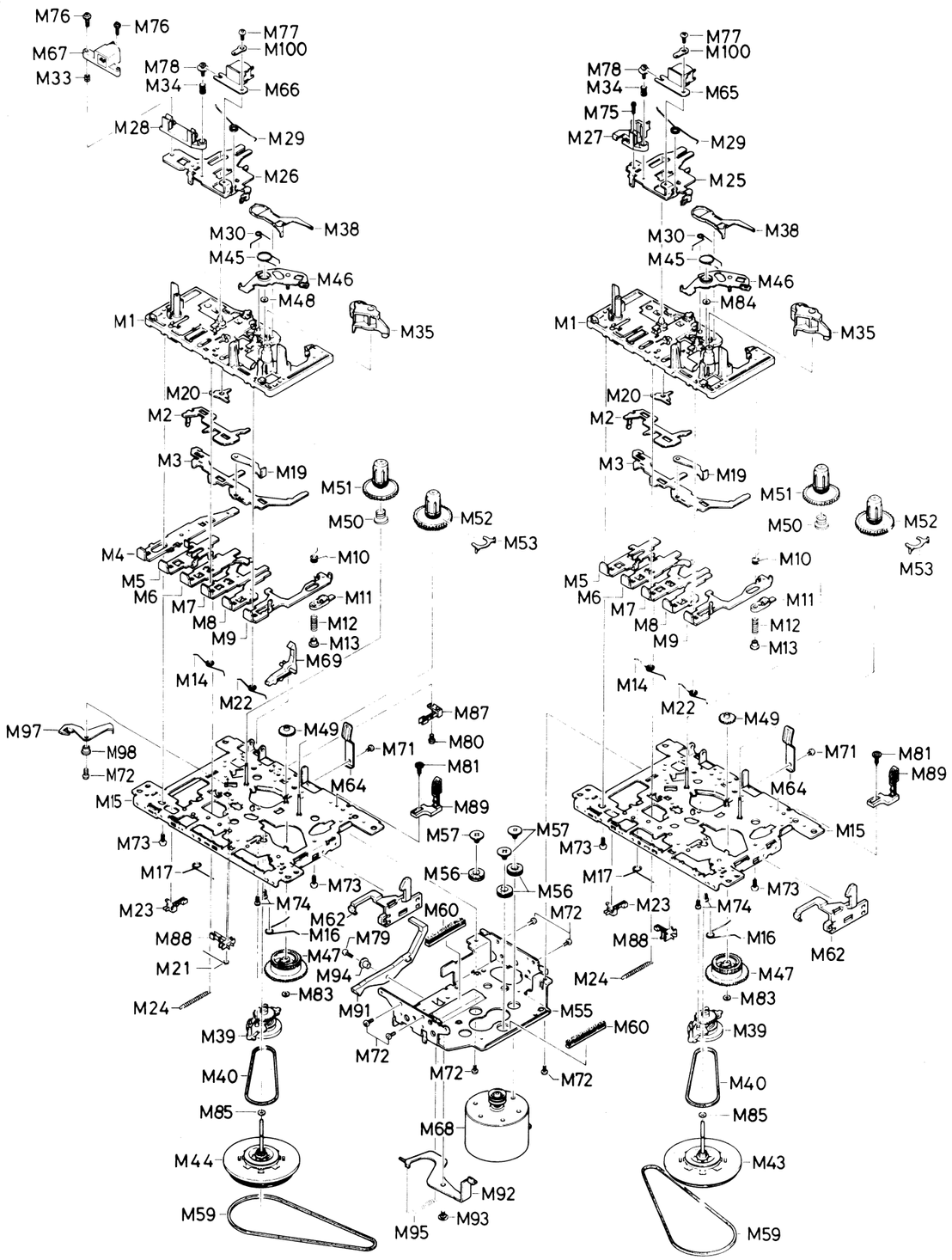
WIRING DIAGRAM (DECK & AMP)



WIRING DIAGRAM



EXPLODED VIEW (MECHANISM)



PARTS LIST (TAPE MECHANISM)

MECHANISM

Ref. No.	Part No.	Description
28	614 196 0470	BRACKET HEAD
M1	614 067 3258	SUB CHASSIS ASSY, BASE
M2	614 201 1744	SLIDE, SWITCH ACTUATOR
M3	614 201 1737	SLIDE, PUSH BUTTON
M4	614 196 0500	LEVER, REC BUTTON
M5	614 196 0555	LEVER, PLAY BUTTON
M6	614 196 0517	LEVER, REW BUTTON
M7	614 196 0524	LEVER, FF BUTTON
M8	614 196 0531	LEVER, STOP BUTTON
M9	614 208 0313	LEVER, PAUSE BUTTON
M10	614 152 1244	SPRING WIRE, P CONTROL
M11	614 208 0320	LEVER, PAUSE
M12	614 151 7186	SPRING COIL, PAUSE
M13	614 129 0669	BOSS, PAUSE STOPPER
M14	614 152 1251	SPRING WIRE
M15	614 067 2770	CHASSIS ASSY
M16	614 152 1275	SPRING WIRE, E ACTUATOR
M17	614 152 1282	SPRING WIRE, PS LEVER
M19	614 140 1539	LEVER, E KICK
M20	614 129 0676	BOSS, PR STOPPER
M21	614 152 1305	SPRING WIRE, REC BUTTON
M22	614 152 1268	SPRING WIRE (B)
M23	614 024 1693	SWITCH, LEAF
M24	614 151 4703	SPRING COIL
M25	614 211 6944	SLIDE, HEAD PANEL
M26	614 210 6822	SLIDE, HEAD PANEL
M27	614 146 5111	BRACKET TAPE GUIDE, HEAD
M29	614 210 3432	SPRING WIRE, PANEL(R)
M30	614 152 1299	SPRING WIRE, M CONTROL
M33	614 151 5090	SPRING COIL, EH
M34	614 151 7162	SPRING COIL, AZIMUTH
M35	614 210 3302	LEVER PINCH ROLLER ASSY
M38	614 140 1614	LEVER, SENSING
M39	614 069 2273	PULLEY ASSY, RF CLUTCH
M40	614 195 5087	SQUARE BELT, RF
M43	614 204 8672	FLYWHEEL ASSY
M44	614 068 1871	FLYWHEEL DISK ASSY
M45	614 151 8312	SPRING PLATE, GEAR
M46	614 070 0916	LEVER ASSY
M47	614 134 9053	GEAR, CAM
M49	614 134 9046	GEAR, FF
M50	614 205 1337	SPRING COIL, BACK TENSION
M51	614 211 3868	REEL ASSY, SUPPLY
M52	614 211 3875	REEL ASSY, TAKE UP
M53	614 195 5094	LEVER, SENSOR
M55	614 122 9553	BRACKET MOTOR
M56	614 126 6831	CUSHION, MOTOR
M57	412 026 1907	SPECIAL SCREW, MOTOR COLLAR
M59	614 133 4127	SQUARE BELT, MAIN
M60	614 126 6848	CUSHION, ANTI VIBRATION
M62	614 140 1522	LEVER, EJECT
M64	614 151 8299	SPRING PLATE, PACK
M65	614 208 4069	HEAD,PLAY
M66	614 208 4052	HEAD,R/P
M67	614 021 8831	MAGNETIC HEAD, E HEAD
M68	614 211 3752	COMMUTATE MOTOR ASSY
M69	614 140 1508	LEVER, RECORD SHAFT
M71	412 026 1402	SPECIAL SCREW, M 2X5, C TAPPING
M72	412 026 2003	SPECIAL SCREW, M2X4, C TAPPING
M73	412 026 2201	SPECIAL SCREW, M2X5, P TAPPING
M74	412 026 2300	SPECIAL SCREW, M2X4.5
M75	412 026 1501	SPECIAL SCREW
M76	412 027 4600	SPECIAL SCREW, 2X8+-CUP

Ref. No.	Part No.	Description
M77	412 031 6607	SPECIAL SCREW, (+)BIND M2X3
M78	412 026 1709	SPECIAL SCREW, AZIMUTH M2X7
M79	412 031 7901	SPECIAL SCREW, M2X6 C TAPPING
M80	614 124 4594	ORDER SCREW, 2X5
M81	412 023 0903	SPECIAL SCREW, 2X5
M83	412 013 5000	SPECIAL WASHER, 1.2X3 8X0.3
M84	412 026 1808	SPECIAL WASHER, 1.45X3.8X0.5
M85	412 013 8902	SPECIAL WASHER, 2X3.5X0.3
M87	614 196 9756	SWITCH, REC
M88	614 195 4424	SWITCH, LEAF
M89	614 209 3849	SWITCH,LEAF, LEAF
M91	614 140 1676	LEVER, P KICK(B)
M92	614 139 8679	LEVER, P KICK(A)
M93	412 005 8101	SPECIAL SCREW, PK COLLAR
M94	614 129 0683	BOSS, COLLAR(B)
M95	614 151 4758	SPRING COIL, P KICK
M97	614 197 0219	LEVER, SW
M98	614 197 0202	BOSS, SW LEVER COLLER
M100	614 208 0276	LUG

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